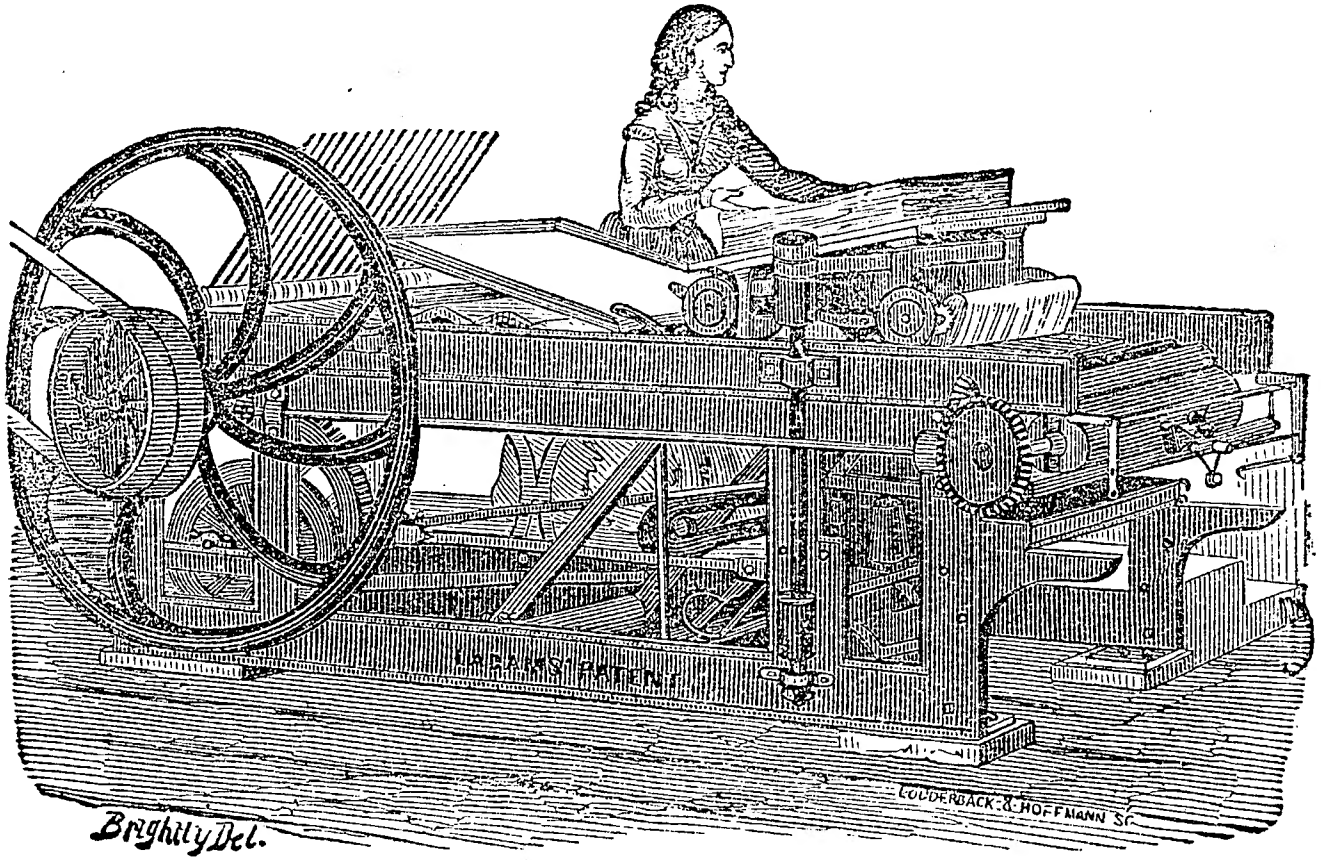
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The Art

OF

PRINTING.

EDITED BY THOS. O. SUMMERS, D.D.

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PREFACE.

THIS volume traces the progress of the art preservative of all art, from the *impressions* of the cylinders of ancient Babylon, to the beautiful pages produced by the stereotype plates and steam-power presses of our own age. It contains a great deal of curious and valuable information, which will scarcely fail to be interesting to the reader, whether young or old. It has been carefully revised, and a few slight additions have been made by

THE EDITOR.

NASHVILLE, TENN., March 21, 1855.

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CHAPTER I.

It is interesting to notice the gradual improvement in the art of navigation. In the youth of the world, the trunk of a tree, hollowed out, formed, most probably, the first canoe. Slow were the advances towards the structure of a merchant vessel, and even when that point was gained, much remained to be accomplished. The invariable time for sailing was summer, when the heavens were genial and the light of day was longer than the darkness of night. Except with a smooth sea and a fair wind, mariners could not venture out of sight of land, lest they should be drifted about over the apparently interminable waste of waters till they perished. Unless, too, under very favorable circumstances, they did not continue sailing during the night, but, anchoring

in some cove or sheltered spot, drew up their vessels on the beach, and gave themselves to repose until the orb of day once more arose on the earth. As, however, the knowledge of astronomy advanced, and various observations of the heavenly bodies were made and collected, the situations and bearings of places were imperfectly surmised. The loadstone at last, with its marvellous powers, was discovered, and very gradually, navigation attained its present enlightened and enterprising condition.

In a somewhat analogous manner, was the art of printing invented by mankind. "The images of men's wits," says lord Bacon, "remain unmaimed in books for ever, exempt from the injuries of time, being capable of perpetual renovation. Neither can they be properly called images, because they cast forth seeds in the minds of men, raising and producing infinite actions and opinion in succeeding ages; so that if the invention of a ship was thought so noble and wonderful, which transports riches and merchandise from place to place, and consecrates the most distant regions in participation of their fruits and commodities — how much more are letters to be magnified, which, as ships passing through the vast seas of time, connect the remotest ages of

wits and inventions in mutual traffic and correspondence." Lord Bacon's observation is a correct one; yet, as thousands of years elapsed after the infancy of the human race, before any of them were borne along by —

> ——— "the Heaven-conducted prow
> Of navigation bold, that fearless braves
> The burning line, or dares the wintry pole,"

—so, as we shall now proceed to show, similar cycles of years revolved before the art of printing arose, and became an engine of incalculable power.

In the library of Trinity College, Cambridge, there is an object on which an intelligent stranger will look with peculiar attention. It is a solid figure, about seven inches high, and three inches in diameter at each end, increasing gradually in circumference from the extremities to the middle, and thus bearing some resemblance to the form of a wine-cask. On its surface are inscribed characters, very minutely and finely wrought, and arranged in vertical lines. These may be easily examined, as the visitor causes the object to revolve on its marble pedestal; while, if he be a lover of antiquity, his interest will be heightened by the consideration that it is probably not less than four thousand years old.

The article in question has long been regarded, on satisfactory grounds, as a *cylinder* found amidst the ruins of Babylon or Persepolis, and it furnishes a specimen of one of the modes adopted in ancient times of preserving memorials of matters of national or family importance. In its date, as well as in its use, it is analogous to those Babylonian bricks of which there are so many specimens preserved; but its rounded surface fitted it to contain a multiplicity of items much more compactly than a flat tablet could have done, while its figure preserved it also from injuries to which other objects were liable. Here, then, is an example, belonging to a remote age, of an *indented* surface, produced by some applied means of *impression*.

Roman antiquities furnish us with a specimen of an *impression* of a different kind, and in a more advanced stage. In the British Museum, there is a metallic *stamp*, the letters of which, as well as the border, are cut in relief. At the back of it is a ring, answering the purpose of a handle, or perhaps intended to enable the owner to wear it as a signet. Its inscription is comprised in two lines: the letters of which are Roman capitals, well proportioned, but neither spaced nor divided, according to the practice in our own

times. As the letters are reversed, the inscription is nearly as follows :—

CICAECILI
HERMIAE.SN.

Which would be thus given according to the modern practice :—

C. I. CÆCILII HERMIÆ SIGNUM.
Caii Julii Cæcilii Hermiæ Signum.

This signet of Caius Julius Cæcilius Hermias resembled in some respects the rings of the ancient Romans, the figures engraved on which were employed for the same purposes as those upon modern seals. The ring of a Roman emperor was indeed a kind of State seal, allowed sometimes to be used by persons who were specially appointed to be his representatives, and the keeping of which, like that of the great seal of England, was intrusted to a particular officer. The engravings on seals of a more ordinary character were very various : sometimes there was the name of its owner, at others there were portraits of ancestors, or friends ; figures connected with the popular mythology, and the worship of the gods ; while in many instances, a person had engraved on his seal symbolical allusions to the real or fabulous history of his family. Accustomed, then, as the ancients were to make impressions with their seals, it seems strange that

printing, which is but the application in a more extended form of an analogous process, did not suggest itself to their minds. That they had very nearly caught the idea, is indeed evident from the following circumstance.

The signet of Hermias, above alluded to, was obviously designed for stamping the letters it contained on parchment, or some other flexible substance, as it is not adapted to make an impression on lead or any kind of metal. The rim and letters being exactly of the same height, and the part which has been cut away being very rough and uneven in point of depth, the signet must have been used *to mark with ink on some small surface.* Had it been designed to make an impression on wax, the part cut away would certainly have been rendered as smooth and even as possible. The experiment of taking an impression from it on paper, with modern printers' ink, has indeed actually been tried, and found to answer remarkably well. Thus it is apparent, that the germ at least of printing was possessed by the ancient Romans. They needed only to have made a stamp, with lines three or four times as long, and containing twenty lines instead of two, to have formed a frame of types which would have printed a whole page. The embryo of this

wondrous art, however, remained in their possession from age to age undeveloped: it was the will of Providence, that its full discovery should be reserved for a more important period of the world's history.

Another practice in use amongst the Romans was also, we might suppose, well calculated to suggest the art of printing to their minds. Quintilian, when alluding to the education of youth, thus expresses himself:—"When the boy has begun to trace the forms of the letters, it will be useful for him to have the letters of the tablet engraved, that through them, as through furrows, he may draw his style. For thus he will neither make mistakes, being prevented by the edges on both sides, nor will he be able to go beyond the proper bound, and by tracing quickly and frequently certain forms, he will strengthen his joints, and will not need the assistance of some one to put his hand above his own and guide it."* It is clear from this passage, that the Romans were acquainted with a method similar in principle to that on which the art of stencilling is founded.

According to Procopius, the emperor Justin I., who lived in the sixth century, had a tablet of

* Quintiliani Instit. Orator.

wood perforated, through which he traced in red ink the first four letters of his name. A plate of gold is stated to have been used in the same way, and for the same purpose, by Theodoric, king of the Ostrogoths.

The Chinese anticipated all other nations in the art of printing, nearly a thousand years ago; the ruler Tang having ordered a work called the "Nine Classics" to be engraved, printed, and sold generally. The species of typography adopted by them is simpler, less costly, and, until recent improvements, more expeditious than our own. As their language consists principally of arbitrary characters, they have not considered it necessary either to cast or to cut an assortment of types to be set up, worked off, distributed, and recomposed, but prefer cutting the characters on a block of wood, and using as many blocks for any particular work as there are separate pages.

So few changes have the arts in China undergone, that we can observe in the practice of the Chinese printer, at the present time, the process adopted by his ancestors in a remote age. He first writes out the page intended to be printed, and when this is done lays it on a block of wood, which is prepared to receive it, having been previously smoothly planed, and covered with a

glutinous paste. After the paper has been affixed to the block, it is rubbed till it is quite dry. It is then as much as possible removed, when the letters appear on the wood in an inverted form, somewhat dimly at first, but brought out fully and vividly by the application of oil.

The engraving of the block now begins. The workman cuts straight down by the sides of the letters, from top to bottom, clearing the spaces between the lines, with the exception of the stops. He proceeds then to the oblique strokes, and cuts the perpendicular ones throughout the entire line; thus preventing the loss of time which would arise from turning the block round for every letter. He now proceeds to the central parts, and the page, although it usually contains five hundred characters, is speedily completed. His ordinary remuneration is equal to eleven cents for one hundred characters.

The implements of the Chinese printer consist of a brush, a pot of liquid ink, a piece of wood bound round with the fibrous parts of a species of palm, to serve as a rubber, and a pile of paper—all placed on a table. The block is inked with the brush, a sheet of dry paper is then placed upon it, over this the rubber is rapidly passed, once or twice; and thus sheet

after sheet is produced until the whole number required is worked off. With this extremely simple apparatus, three thousand impressions may be printed in a day.

It has been supposed by some that the art of engraving wood blocks, and of taking impressions from them, must have been introduced into Europe from China, but there is no necessity for adopting this theory. At an early period, marks called monograms, consisting of the initials of the names of individuals, or of other short arbitrary figures, similar to those which may be seen stamped on bales of goods, were in common use. Blocks for the purpose of stamping these were invented, and the transition from this point to the invention of blocks for engraving was an easy and simple process. It was also a frequent practice in Europe, from the twelfth to the fifteenth century, to impress inked stamps on paper. If, indeed, the following account is to be credited, a still further stride in the art of engraving and printing had been made.

Papillon, in his "*Traité de la Gravure en Bois*," tells a story of his seeing a work describing the deeds of Alexander the Great, executed by Alexander Alberic Cunio, knight, and Isabella Cunio, his twin sister, and finished by them

when they were only sixteen years of age, at the time when Honorius IV. was Pope; that is, at the period between the years 1285 and 1287. Papillon adds, that the following words among others were coarsely engraved on the block which formed the frontispiece, in bad Latin, or ancient Gothic Italian, with many abbreviations: "To our illustrious and generous father and mother, by us Alexander Alberic Cunio, knight, and Isabella Cunio, brother and sister, first reduced, imagined, and attempted to be executed in relief with a little knife, on blocks of wood, then joined and smoothed by his learned and beloved sister, and finished at Ravenna, after eight pictures of our designing, painted six times the size here represented, cut, explained in verse, and thus marked on paper to multiply the number, and to enable us to present them as a token of friendship and affection to our relations and friends." The narrative thus given by Papillon is interesting, and if established, would assign the Cunios a high place in the history of the typographical art; but, though its truth is asserted by Mr. Otley, in his celebrated work on the subject, strong reasons are advanced by others for doubting the credibility of the story.

From the cheapness of *playing-cards*, which

were used not only in the higher but the lower ranks in the fourteenth century, it has been conjectured that the earliest sets of them were produced by stencilling, and that the outline, over which a brush dipped in liquid color was smeared, was formed by some rude process of wood-graving. The great cardmakers of the period referred to were the Germans, who still give the name of *formschneider*, or figure-cutter, to a wood-engraver. This term is said to occur in the town books of Nuremberg, that curious old city, the cradle of many arts, so early as the year 1441. At that time, cards were produced in great variety: some, like the missals of the Romish Church, were executed with peculiar skill, being radiant with purple and gold; while others descended in the scale of appearance, until they met the eye with a rude outline, smeared with color. Alas! that the world should ever have been cursed with such instruments of evil!

Another step was taken towards printing, when the *paintings* of saints and other objects were copied in outline, and accompanied by a few words or sentences of Scripture. Grotesque as these were, they became exceedingly popular, and supplied the people with an inducement to learn to read. The earliest print from a wood

block, to which we can affix any certain date, is in the celebrated collection of Earl Spencer. It is dated 1423, and represents St. Christopher carrying the infant Saviour across the sea. It was found in one of the most ancient convents of Germany, pasted in one of the leaves of a Latin manuscript of the year 1417.

But here it is desirable briefly to pause, in order to glance at the history of the *substances* used at various times to receive impressions from writing or printing implements. The ancients had recourse, when they wished to record any matter, to the leaves of the palm tree, to table-books of wax, ivory, and lead; to cloths of cotton and linen; to the intestines and skins of animals, to the backs of tortoises, and to the inner bark of plants.

Few, indeed, are the plants which have not, at some time, been used for such purposes; and hence many of the terms employed, as *codex*, originally signifying the trunk or stem of a tree; *liber*, the thin coat or rind; and *tabula*, which properly means a plank, or board. The British Museum contains manuscripts on ivory, on plates of gold and of silver, and on other substances too numerous to detail. Among the last-mentioned are many written on the leaves of the

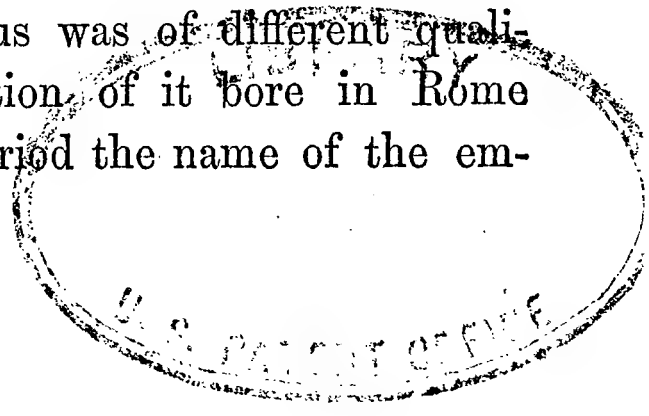
talipot tree, a species of palm peculiar to Ceylon, the Malabar coast, and the Marquesas and Friendly Islands, which is still employed for various purposes by the Cingalese. The leaves of the tree in question are first soaked in boiling water and dried: the letters are then engraved with a pointed steel instrument, and rubbed over with a dark-colored substance, which renders them more easily legible.

The *papyrus*, called by the Egyptians *byblos*, formed an article of commerce long before the time of Herodotus, and was extensively used in the western part of Europe for records on rolls, as is proved by the number of such documents found at Herculaneum. A duty which existed on imported papyrus was abolished by Theodoric the Great, in the sixth century of the Christian era, on which occasion Cassiodorus congratulated the world in a letter upon the cessation of a tax alike unfavorable to the progress of learning and of commerce.

The substance thus employed consisted of thin coats or pellicles of the papyrus tree, which grows in swamps to the height of ten or more feet. According to Pliny, the different coats of this plant were joined together by the action of

the turbid Nile water, which had a kind of glutinous property. To prepare it for writing, one layer of papyrus was placed flat on a board, and a cross layer put over it; and when thus adjusted they were pressed, and afterwards dried in the sun. The sheets were then fastened or pasted together, the best being taken first, and afterwards the inferior sheets. There were never more than twenty in a roll. The papyri found in Egyptian tombs differ very much in length, but not materially in breadth, as this was probably determined by the usual length of the strips taken from the plant. The length might be carried to almost any extent, by fastening one sheet to another. The writing was in columns, with a blank slip between them.

The papyrus became the most common material on which books were written by the Greeks and the Romans. The former derived their name for a book from *byblos*, the term applied to the papyrus by the Egyptians; while, from the coats or rind of the plant being employed for it, the Romans called a book *liber*. The paper made from the papyrus was of different qualities: the best description of it bore in Rome during the imperial period the name of the em-



peror, as Augustus, or Claudius, while the inferior sort was not used for writing, but chiefly by merchants for packing their goods.

A portion of the Book of Psalms, written on papyrus—probably the earliest fragments of the Sacred Scriptures known to exist—has recently been brought from Egypt to England by Dr. Hogg, who says :*—"Among the various objects of antiquity which were purchased from the Arabs at Thebes, were two papyri, the one in Coptic and the other in Greek—both in the form of books. The subject of the Coptic papyrus, now in the possession of Sir William Gell at Naples, has not yet been ascertained; but since my return to England the Greek papyrus has been discovered to contain a portion of the Psalms. The leaves, of about ten inches in length by seven in width, are arranged, and have been sewn together like those of an ordinary book. They are formed of strips of the papyrus, crossing each other at right angles. The writing, continued on both sides, is perfectly legible, the letters partaking both of the uncial and cursive forms, sometimes standing quite apart, unconnected by cursive strokes, with accents occasionally but not regularly inserted.

* Visit to Alexandria, Damascus, and Jerusalem.

"The beginning of the manuscript is imperfect, and it concludes with the second verse of the thirty-fourth Psalm. The text, as far as it has been collated, has been found to be a good one, and to possess some interesting variations not found in other ancient versions. These papyri were both discovered among the rubbish of an ancient convent at Thebes, remarkable as still presenting some fragments of an inscription, purporting to be a pastoral letter from Athanasius, patriarch of Alexandria, who died A.D. 371, which has been conjectured to be the age of the manuscript."

Parchment was, next to papyrus, the most common material for writing on. It was formed for this purpose of prepared skins, chiefly those of sheep and goats, and is said to have been used for writing so early as the year B.C. 250, by Eumenes, King of Pergamus. As he was desirous of collecting a library which should vie with that of Alexandria, and was prevented from obtaining a sufficient quantity of papyrus by the jealousy of the Ptolemies, he had recourse to this substance, which derived its name from the site of his kingdom.

It was upon this material that so many of the manuscripts both of the ancient classics and

Sacred Scriptures were written by the monks in the *scriptoria*, or writing-rooms, of their convents.

The picture drawn by one of our poets was strictly true during the lapse of many ages; for then—

"———along the cloister's painted side,
The monks—each bending low upon his book,
With head on hand reclined—their studies plied:
Forbid to parley, or in fact to look,
Lengthways their regulated seats they took:
The strutting prior gazed with pompous mien
And wakeful tongue, prepared with prompt rebuke,
If monk asleep in sheltering hood were seen:
He, wary, often peeped beneath that russet screen.
Hard by, against the window's adverse light,
Where desks were wont in length of row to stand,
The gowned artificers inclined to write:
The pen of silver glistened in the hand.
Some, on their fingers, rhyming Latin scanned;
Some, textile gold from balls unwinding drew,
And on strained velvet stately portraits planned:
Here arms, there faces, shone in embryo view:
At last to glittering life their sober figures grew."

Monks like those described in the quotation just given, were the real predecessors of our modern printers—multiplying books, however, by a process of prodigious toil and labor. Richard de Bury, Bishop of Durham, says, "Many wrote out manuscripts with their own hands, in the

intervals of the canonical hours, and gave up the time appointed for bodily rest to the fabrication of volumes: the sacred treasures of whose labors, filled with cherubic letters, are at this day resplendent in most monasteries." But, though the copies of manuscripts were many, and the monks' labors incessant, the whole life of the most industrious of them employed in this task would add only a few to the number of books in the world. When a volume was at last produced in fair parchment, after the arduous labors of years, it was covered with immensely thick lids of wood and leather, studded with large nails, and curiously clasped; and was studiously preserved from the common gaze on the shelves of the monastic library.

"Laymen," says the same prelate, "to whom it matters not whether they look at a book turned wrong side upwards, or spread before them in its natural order, are altogether unworthy of any communion with books." Nor was this a solitary conclusion: it was practically and constantly acted on at this period, when the bishop wrote his treatise entitled "Philobiblion; or, The Love of Books"—more than a century before the art of printing was introduced. The splendid volumes produced in the manner referred to, bore

evidence, however, not only of persevering industry, but of great ingenuity; the letters at the beginning of each chapter or section being adorned with curious devices: frequently, too, a painting, called an illumination, was introduced, radiant with gold, crimson, and azure. But no vulgar eyes looked on their contents: they were only unclasped on days of solemnity by the abbot or the prior, and then restored, like the jewels of the priesthood, to their dusty cases.

There appears to have been sometimes a difficulty in obtaining parchment for the preparation of these works; for the practice arose of erasing the original writing from a manuscript, and of engrossing on it a second time. The name *palimpsest* was given to a parchment thus used, the term strictly meaning "twice prepared for writing." In this way, many valuable manuscripts were irrecoverably lost, but, in some instances, an important document has been recovered. A palimpsest manuscript, for example, was discovered in 1816: it consisted of one hundred and twenty-seven sheets of parchment; and as the result of prodigious labor, the "Institutes of Gaius" were retrieved, though nearly the whole had been rewritten with the Epistles of Jerome—the lines of the two works running in the

same direction, while no fewer than sixty-three pages had been covered with writing three times.

The parchment employed for manuscripts was joined together, so as to form one sheet, and when the work was finished, it was rolled on a staff, and called a *volumen*, in which originated our word volume. For each book into which an author divided his work, there was generally a separate volume: thus, Ovid calls his fifteen books of Metamorphoses fifteen volumes. The title of a book was written on a small strip of papyrus or of parchment, with a light red color, and was fastened to the body of the manuscript.

In the middle ages, none but kings, princes, and prelates, universities and monasteries, could have libraries; and even the collection of books formed by them strangely contrasted with many since possessed by private individuals. The royal library of France, collected by the sovereigns Charles V., VI., and VII., and preserved with great care in one of the towers of the Louvre, consisted of only about nine hundred volumes, and was purchased by the Duke of Bedford, A.D. 1425, for one thousand two hundred livres. It appears, from a catalogue still extant, to have been chiefly composed of legends, histories, romances, and books on astrolo-

gy, geomancy, and chiromancy, which were the favorite studies of the times.

The kings of England were not so well provided with books. Henry V. had a taste for reading, but his literary treasures could not satisfy it, and several books which he borrowed were claimed by the owners after his death. The Countess of Westmoreland presented a petition to the privy council, A. D. 1424, stating that the king had borrowed a book from her, containing the "Chronicles of Jerusalem," and praying that an order might be given under the privy seal for its restoration. The order was granted with great formality.

About the same time, John, the prior of Christchurch, Canterbury, presented a similar petition to the privy council, setting forth that the king had borrowed from his priory a volume containing the works of St. Gregory; that he had never returned it; but that in his testament he had directed it to be restored; notwithstanding which, the prior of Shire, who had the book, refused to give it up. The council, after mature deliberation, commanded a precept, under the privy seal, to be sent to the prior of Shire, requesting him to deliver up the book, or to appear

before the council to assign the reasons for his refusal.

At the commencement of the fifteenth century, the manuscript books used in the service of the church were articles of great rarity and value. As an instance of this it may be mentioned that, when a priest, named Henry Beda, in the year 1406, bequeathed his manuscript Breviary to the church of Jacques-la-Boucherie, he left, at the same time, to William l'Exale, the churchwarden of the said church, the sum of forty sols, to pay the expenses of having a cage made in which the Breviary might be kept. The practice was for persons in those times to assemble round such books for the purpose of reading the prayers out of them; but that no one might be tempted to take a book away, it was attached to a chain which was fastened in the wall.

A translation of part of the New Testament into a very ancient dialect of the German language, is commonly known by the name of the Gothic Gospels, or the Silver Book. It is deposited in the Public Library at Upsal, in Sweden, and is one of the oldest books, and most curious remains of ancient art, known to be in existence. This work is composed of very thin smooth vellum, of a fine purple or violet color, and of a folio

size. The first three lines of each Gospel, the beginning of the Lord's Prayer, and of some other passages, deemed especially important, as well as the names of the Evangelists, are impressed in gold letters: the other letters are all of silver. Much of the volume, in fact nearly one half, is now lost, but more than one hundred and sixty leaves are yet remaining, to show how beautiful the whole must have been when complete, and to suggest the means by which this extraordinary work was executed.

To ascertain the latter point, we may refer to the mode often adopted by a bookbinder, when inserting the gilt letters on the back of a book. He rubs on the part where these are to be placed some adhesive substance, such as white of egg, puts on this some gold leaf, and then, by means of a heated stamp, impresses the particular letters which may be required. In this way, the gold is caused to adhere firmly on the leather in the places where the impression is made, and the remaining gold is wiped off with a rag. Such was, in fact, the old process of lettering, and nearly in this way the Silver Book must have been executed.

On a dispute arising in reference to the process which had been employed, Professor Ihre insti-

tuted a very minute examination of this codex in the presence of four literary gentlemen, and came to the conclusion, that the work could only be produced in the way which we have described. It was apparent, for instance, that each letter was respectively so exactly similar in form to every other, that it would have been absolutely impossible for the best writers to imitate its perfect regularity. And then there were the tangible remains of the impression; for the form of every letter being hollow on the face of the vellum, on turning to the back of the leaf it was there found to be convex, and that so palpably that the simplest touch would immediately show the place where the type had been pressed down, the margin being quite smooth and the impressed part rough. In a hundred cases, the substance of the vellum appeared actually cut out by the impression of the tool, while the surrounding part was entire. To complete the evidence, a film of a glutinous or oleaginous nature was in many parts perceptible, in a strong light, between the metallic foil and the metal to which it adhered. It was, however, objected that vellum could not be impressed in this way without being wrinkled up; but Gerard Meerman states that his bookbinder tried the process for him,

and found it succeed as well in vellum as in leather.

Since the discovery of this "Silver Book," some fragments of other portions of Scripture have been found in several places, particularly parts of the Epistle to the Romans, in the library of Wolfenbuttel: these were published by Kinttel, who states that they appear to have been impressed in a similar way to the Upsal Book. It is very curious that this language—that of the old Franks—should be the only one in which evident proofs of the practice of this art should be found. It must have been too costly for ordinary use, and perhaps the only persons rich enough to command such expensive luxuries, were the monarchs of the conquering tribes by whom the language was spoken.

Montfaucon argues, and that with seeming conclusiveness, that *cotton paper* was discovered in the empire of the east, towards the end of the ninth or early in the tenth century. There are several Greek manuscripts, in parchment or vellum, and cotton paper, which bear the date of the year they were written in; but the greater part have no date. The most ancient manuscript in cotton paper, with a date, is that in the library of France, which was written in 1050: Montfaucon discovered some manuscripts of the tenth

century. It is probable that, were all the libraries both of the east and the west diligently searched, others might be found still more ancient. It may be inferred that this bombycine, or cotton paper, was invented in the ninth century, or at latest in the beginning of the tenth. Towards the end of the eleventh, and the early part of the twelfth century, its use was common throughout the empire of the east, and even in Sicily. Roger, king of Sicily, says in 1145, that he had renewed on parchment a charter that had been written on cotton paper in the year 1102, and another dated in the year 1112. In the rule drawn up about the same time by the Empress Irene, consort of Alexius Commenus, for the nuns she had established at Constantinople, she says that she leaves them three copies of the rule, two on parchment and one on cotton paper. Cotton paper became, subsequently, still more in use throughout the Turkish empire.

Nothing can be affirmed definitively as to the origin of the *paper now in use.* Demster, in his Glossary on the Institutes of Justinian, declares that it was invented towards the close of the twelfth, or in the beginning of the thirteenth century. Though he speaks of bombycine paper, there is reason to conclude that he also compre-

herds under that name the linen rag paper, which is much like that made from cotton. In Sicily, the state of Venice, and perhaps other countries, both kinds were equally used. Several editions of Aldus Manutius, produced at Venice, are on cotton paper: its proximity to Greece had, no doubt, introduced the use of it there: Demster seems, therefore, in the work we have referred to, to speak of both. But in the "Treatise against the Jews," by Petrus Mauritius, a contemporary of St. Bernard, who died in 1153, it is expressly said: "The books we read every day are made of sheep, goat, or calf skin; or of oriental plants, that is, the papyrus of Egypt, or of *rags*." The word thus employed, signifies undoubtedly such paper as is now in use: there were books of it in the twelfth century; and as public acts and diplomas were written on the Egyptian paper till the eleventh, the probability is that linen rag paper was invented about the same century, and that it occasioned the disuse of the Egyptian paper in the west, as that of cotton did in the east. Petrus Mauritius affirms, that there had been already in his time some books of the linen rag paper, but they must have been very scarce. Though Montfaucon made the most diligent search both in France and Italy, he could not find a single leaf

of paper such as that now used, of date prior to the year 1270; so that the precise period of its first fabrication must remain undetermined.

One of the earliest specimens of paper from linen rags hitherto discovered, is a document, with the seal preserved, dated A. D. 1239, and signed by Adolphus, Count of Schaumberg. But Casiri positively affirms, that there are many manuscripts in the Escurial, both upon cotton and linen paper, written prior to the thirteenth century. France used this kind of paper in 1314; England about the year 1342; and Italy in 1367. The Germans possess a specimen bearing date 1308, but it has been supposed that this is a mixture of linen with cotton.

Some of the letters addressed to Hugh le Despencer, from Gascony, at various periods in the reign of Edward II., are written on a very stout and beautiful vellum; others on paper of a sound and strong fabric, well-sized, and such as may be pronounced a good article. In the tower of London, there are a few letters upon cotton paper; but parchment or vellum was the material generally used for such purposes. The original register of the privy seal of Edward the Black Prince, from July 20, Edward III., to January 21, Edward III., forming one volume, is, we may ob-

serve, on paper. It is highly probable that in the south of France, the supply of this paper was received from the Moorish merchants or manufacturers of Spain.

The inventor of the linen rag paper, whoever he was, entitled himself to the remembrance and gratitude of posterity. The art of printing would have been, comparatively, of little value, without the means of procuring a proper material to receive the impressions of the type. Had the papyrus been the only substance, it would have been impossible to have procured it in sufficient quantities to make large editions of books. Cotton paper, though an improvement, was but a rude and coarse article, unfit for any of the delicate purposes which the press was employed to effect. The perfection of the art of paper-making consisted in finding a material easily prepared, and which could be procured in sufficient quantities.

Meanwhile, the Italians, Flemings, Germans, and Dutch began to engrave on copper as well as on wood; and books of images, as they were called, were produced, some with and some without a text. The pages were placed in pairs facing one another, and as only one side of the leaves was printed, the blank pages also stood

directly opposite. The text corresponding with the figures was sometimes placed below, at other times on the side, and not unfrequently it issued as a label, from the mouth of the person or figure. Among the treasures of the British Museum, is the "Book of Canticles," printed on only one side of the paper from engraved wooden blocks. Only three complete copies are believed to be extant. Passages of text, engraved in large characters, are interspersed on scrolls fantastically disposed among the figures, and give to the pages a very singular appearance.

Another work of the same class, and in the same collection, is called "Biblia Pauperum," or the "Poor Man's Bible." It consists of forty small folio plates intended to illustrate sentiments drawn from the Scriptures; the whole having been engraved on wood, printed on one side of the paper, and placed in the manner previously described. Each page contains four busts: the two upper ones represent the prophets or other persons, whose names appear beneath them: the two lower busts are anonymous. The middle of the pages, which are all marked by letters of the alphabet, is occupied by three historical pictures, one of which is taken from the New Testament. The inscriptions, occur-

ring at the top and the bottom of the page, consist of texts of Scripture and Leonine verses—so called from Leo the inventor—the end of each line rhyming with the middle of it, as in the following example:—

"Gloria *factorum* temere conceditur *horum*."

The place in which the art of printing was invented has occasioned much controversy. A claim to the honor is put forth for Haarlem, in connection with Laurentius Coster—so called from his father's holding the office of custos of the cathedral in that city. The story generally related of him is as follows:—He began with carving letters on the rind of beech trees, and impressing them on paper, for the amusement and instruction of his grandchildren. Having happily succeeded in printing one or two lines, he invented, with the aid of his son-in-law, Thomas Peter, a more glutinous writing-ink, because he found that the common ink sank and spread; and thus formed whole pages of wood, with the letters cut on them; "of which sort," says Hadrian Junius, "I have seen some essays in an anonymous work, printed only on one side, entitled '*Speculum Nostræ Salutis*;' in which it is remarkable that in the infancy of printing (as nothing is complete at the first in-

vention) the back sides of the pages were pasted together, that they might not, by their nakedness, betray their deformity."

Laurentius died in 1440. The works he produced—considering the difficulties he had to encounter, and the fact that they were printed with separate wooden types, fastened together with thread—must have cost years of labor. But they were at best rude and inelegant. The pages are not numbered: there are no divisions at the end of the lines: there is no punctuation: the lines are uneven, and the pages are not always of the same size or shape. To Coster, however, credit is due for what he accomplished: he appears to have acted independently and zealously; but we cannot trace in his works the beginning of the art on whose rise we are now dwelling.

An ancient German chronicler, named Trithemius, who appears to have personally known one of the three he describes, thus accounts for the origin of printing:—"At this time, in the city of Mentz, on the Rhine in Germany, and not in Italy, as some have erroneously written, that wonderful and then unheard-of art of printing and characterizing books was invented and devised by John Guttenberg, a citizen of Mentz,

who having expended almost the whole of his property in the invention of this art, and, on account of the difficulties which he experienced on all sides, was about to abandon it altogether; when, by the advice and through the means of John Fust, (or Faust,) likewise a citizen of Mentz, he succeeded in bringing it to perfection. At first, they formed (engraved) the characters or letters in written order on blocks of wood, and in this manner they printed the vocabulary called a 'Catholicon.' But with these forms (blocks) they could print nothing else, because the characters could not be transposed in these tablets, but were engraved thereon, as we have said.

"To this invention succeeded a more subtle one, for they found out the means of cutting the forms of all the letters of the alphabet, which they call matrices, from which again they cast characters of copper or tin, of sufficient hardness to resist the necessary pressure which they had before engraved by hand. And truly, as I learned thirty years since from Peter Opilio (Schœffer) de Gernsheim, citizen of Mentz, who was the son-in-law of the first inventor of this art, great difficulties were experienced after the first invention of this art of printing; for in printing the Bible, before they had completed the first qua-

ternion, (or gathering of four sheets,) four thousand florins were expended. This Peter Schœffer, whom we have before mentioned, first servant, and afterwards as son-in-law to the first inventor, John Fust, as we have said, an ingenious and sagacious man, discovered the more easy method of casting the types, and thus the art was reduced to the complete state in which it now is. These three kept this method of printing secret for some time, until it was divulged by some of their workmen, without whose aid this art could not have been exercised: it was first discovered at Strasburg, and soon became known to other nations. And thus much of the admirable and subtle art of printing may suffice—the first inventors were citizens of Mentz. These first three inventors of printing, (*videlicet,*) John Guttenberg, John Fust, and Peter Schœffer, his son-in-law, lived at Mentz, in the house called Lum Jungen, which has ever since been called the Printing Office."

It is a deeply interesting fact, that, after testing by humbler efforts the capabilities of his press and his movable types, Guttenberg actually succeeded in printing a complete edition of the Bible, between the years 1450 and 1455. It was executed with cut-metal types, in six hun-

dred and thirty-seven leaves, and was printed on vellum.

A story of this period is told which is very likely to have been a true one. It is stated that Fust went to Paris with some of his finest vellum Bibles, one of which was sold to the king for seven hundred and fifty crowns, and another to the archbishop of Paris for three hundred crowns. The people, however, unwilling to give, even if they were able, so enormous a sum, were supplied, to some extent, at the price of fifty crowns. It is not to be supposed that all were equally ornamented; yet the beauty of the work, the elegance of the flower pieces, and the variety of the finest colors, which were intermixed with gold and silver, led many purchasers to show their purchases to their friends, each one thinking, as he produced his, that the whole world could not contain such another.

The archbishop considering his Bible worth his majesty's seeing, carried it to the king, who regarded it with surprise, and in return showed his own. On comparing them, it was found that the ornaments were not exactly the same; but as to the other part, which was supposed to be written, they observed such a conformity in the numbers of pages, lines and words, and even letters,

as soon convinced them, to their great astonishment, that they must have been produced by some other mode than transcription. Besides, to transcribe two such Bibles would have been the work of a man's life; and on making inquiry, Fust was found to have sold a considerable number. Orders, therefore, were given without delay to apprehend the vendor, and to prosecute him as a practitioner of the Black Art. Fust now solved the mystery; whereupon he was discharged from all prosecution, and honored with a pecuniary reward, which, it is said, was also paid to his descendants.

Such, then, was the origin of this great power, which has "reformed religion, and remodelled philosophy; has infused a new spirit into laws; which overrules governments with a paramount authority; makes the communication of mind with mind easy and instantaneous beyond example; confers a perpetuity, unknown before, upon institutions and discoveries, and gives those wings to science which it has taken from time."

Of this art, as we have seen, the Bible was the earliest and most important specimen; and we have looked on a copy of this extraordinary work of Guttenberg with indescribable interest. The first he completed was, indeed, the parent

of an innumerable race: it was in Latin, but of how many languages may it now be said, Each one may read in his own tongue the wonderful works of God! In these pages, the great God, their Maker, their Lawgiver, their Redeemer, their Judge, speaks to the children of men. There they hear the voice of their Creator, deigning to reveal truths by the inspiration of his Holy Spirit, which no human intellect ever conceived. What a portraiture is there of our fallen and helpless condition in consequence of sin! What a display of the exceeding riches of the grace of God in so loving the world as to bestow upon it the gift of his only-begotten Son, that whosoever believeth in him might not perish, but have everlasting life! What a rich provision for sanctification in the work of the Holy Spirit, renewing the heart and changing it from the slavery of sin to the love and practice of holiness! What rich supplies of promises, adapted to meet all the temporal and spiritual wants of the children of men!

Precious Bible! Where shall we find a treasure to be compared for a moment with that we find in thee? "It cannot be gotten for gold, neither shall silver be weighed for the price thereof. It cannot be valued with the gold of

Ophir, with the precious onyx, or the sapphire. The gold and the crystal cannot equal it; and the exchange of it shall not be for jewels of fine gold. No mention shall be made of coral, or of pearls; for the price of wisdom is above rubies. The topaz of Ethiopia shall not equal it, neither shall it be valued with pure gold." Spirit of the Lord! Thou, by whose inspiration all Scripture was given, open our eyes to the truths it reveals: sanctify our hearts, that they may delight in them all: make us wise for a glorious immortality!

CHAPTER II.

A PART of the county of Kent, in England, has been known by many successive generations as the "Weald,"—a modernization of the Saxon term "Wald,"—signifying a forest, which, at one period, most probably flourished there. The district must, however, have once been in a very different state from that which at present prevails; for the visitor who now digs beneath the green turf, will discover the remains of thin and delicate-shelled creatures, which must have tenanted some quiet stream. But at what period of our globe's history a river flowed through this part of Kent, or when it was intersected by many streams, we know not; though that such was once the case seems beyond all reasonable dispute.

Lambarde has thus described its state in the sixteenth century:—"It was a great while together nothing else but a desert and waste wilderness, not planted with towns or peopled with men, as the outsides of the shire were, but stored

and stuffed with herds of deer and droves of hogs only." He proceeds to say—"It came to be taken even as men were contented to inhabit it, and by piecemeal to rid it of the wood, and to break it up by the plough." It may naturally be supposed that the race of men who would undertake such a work would be rude and rustic; and yet, among them, and in some homely dwelling of this wild district, William Caxton was born, and passed some of his early years.

At that period, an obstacle existed to individuals rising from a lower to a higher grade of the social scale, the recollection of which, in contrast with our present opportunities for progress, may well excite lively gratitude. A law in the time of Henry IV. recites that, according to ancient statutes, those who labor at the plough or cart, or other service of husbandry till at the age of twelve years, shall continue to abide at such labor, and not be put to any mystery or handicraft; notwithstanding which statutes, says this law, country people, whose fathers and mothers have no land or rent, are put to divers crafts within the cities and boroughs, so that there is great scarcity of laborers and other servants of husbandry. And then this statute enacts, "That no man nor woman, of what state or condition they

be, shall put their son or daughter, of whatsoever age he or she be, to serve as apprentice to a craft or other labor within any city or borough in the realm, except he have land or rent to the value of twenty shillings by the year at least, but they shall be put to other labors, as their estates doth require, upon pain of one year's imprisonment." Thus, as it was decreed in India that the Soodra caste should be perpetuated in each successive generation, so in England the Statute Book shows that there was a period when only the proprietor or tenant of land, to a specified extent, could be trained to the exercise of any handicraft or trade. The citizens of London, however, procured a repeal of this oppressive Act in the reign of Henry VI.

That a school had been planted within reach of the humble homesteads of the Weald is evident, for Caxton speaks in after-life, and under the influence of the prevailing superstition, of being "bounden to pray for my father's and mother's souls, that in my youth sent me to school, by which, by the sufferance of God, I got my living, I hope truly."* And that he did not come under the operation of the obnoxious law just referred to, is equally obvious from other circumstances.

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* Preface to the Histories of Troy.

A school without books suggests to our minds a strange spectacle; and yet the place to which Caxton went for instruction could scarcely have had books worthy of the name. There existed at this time, indeed, the Company of Stationers, or Text Writers, who wrote and sold the books then in use, and among them the Absies, as they are called, Alphabets in fact, accompanied by the Lord's Prayer, the address to the virgin Mary, called Ave Maria, and a few similar things. This fraternity dwelt in the neighborhood of St. Paul's, and gave rise to the names of places adjacent, as Creed Lane, Amen Corner, and Ave Maria Lane.

Literature, properly so called, was then included within extremely narrow limits.

Poetical literature had begun to be cultivated with spirit and taste in France, prior to the Conqueror's invasion of England. Wace, the author of a narrative poem, entitled Le Brut d'Angleterre, (Brutus of England,) and some other works; Benoit, a contemporary, author of a History of the Dukes of Normandy; and Guernes, an ecclesiastic of Picardy, who wrote a metrical life of Thomas à Becket—are the Norman poets of most eminence whose writings can be connected with the literature of England. They com-

posed most frequently in rhymed couplets, each line containing eight syllables.

The only other compositions that have come down to us from the century following the Conquest, as those of individuals living in or connected with England, are works written in Latin by learned ecclesiastics, the chief of whom were John of Salisbury, Peter of Blois, Joseph of Exeter, and Geoffrey of Monmouth, who wrote a history of England, about the year 1138. According to Dr. Johnson, it was about 1154 before the Saxon tongue began to take that form in which the beginning of the present English may plainly be discovered. At that period, it did not contain many Norman words, but its grammatical structure was considerably altered. Of a metrical Saxon or English version of one of Wace's works by Layamon, a priest of Ernely on the Severn, composed, it is believed, towards the close of the twelfth century, Sir H. Ellis says: "As it does not contain any word which we are under the necessity of referring to a French origin, we cannot but consider it as simple and unmixed, though very barbarous Saxon."

Sir Henry Ellis further considers, that certain peculiarities seem to prove that the pronuncia-

tion of our language had already undergone a considerable change. "Indeed," he observes, "the whole style of this composition, which is broken into a series of short, unconnected sentences, and in which the construction is as plain and artless as possible, and perfectly free from inversions, appears to indicate that little more than the substitution of a few French for the present Saxon words was now necessary to produce a resemblance to that Anglo-Norman, or English, of which we possess a few specimens, supposed to have been written in the early part of the thirteenth century. On the whole, it seems reasonable to infer, that Layamon's work was composed at, or very near, the period when the Saxons and Normans in this country began to unite with our nation, and to adopt a common language."

The age of chivalry and the Crusades gave rise to the English metrical romances, which are supposed to have originated in certain collections of stories and histories, compiled by the monks of that period. For a long time, poetry appeared only in the garb of the chronicle or the romance. Familiar as we are now with it in its various forms, not one trace of these forms was then discoverable. We must look to the middle of the thir-

teenth century, if we would observe the dawn of miscellaneous poetry. About a century later, we find the Vision of Piers Ploughman, a satirical poem, by Robert Longlands, which discovers the progress that was made towards a literary style, and the ascendency of the language of the Anglo-Saxons over that of the Normans.

As, however, the French tongue kept possession of the court and higher circles, it required a man of no ordinary genius, attainments, and influence, to give literary permanence and consistency to the native language poetry of England.

A proclamation of Edward I. is stated to be extant, in which he endeavors to excite his subjects against the king of France, by imputing to him the intention of conquering the country, and establishing the French tongue; and this accusation is also frequently repeated in the proclamations of Edward III. The numerous translations into English of metrical romances at this period, would seem to indicate, however, that the native language was becoming more familiar than French. An important change was, moreover, effected in 1362; for by the thirty-sixth of Edward III. it was enacted, that for the future all pleas should be pleaded, shown, defended,

answered, debated, and judged, in the English tongue, but should be entered and enrolled in Latin. Still, the statutes of the realm long continued to be promulgated in French; and it was only from the time of the accession of Richard III. that Englishmen were governed by laws written in their own language. The earliest English legal instrument known to exist is said to bear date 1343; and there are not more than three or four entries in English on the rolls of parliament before the reign of Henry VI., after whose accession the use of the native tongue became very common.

Sir John Mandeville, whose work dates not long after the time just mentioned, may be regarded as the father of English prose, no original work being so ancient as his Travels. But the translation of the Bible, and other writings of Wycliffe, nearly thirty years afterwards, give evidence of the copiousness and energy of which our native dialect was at that time capable.

Of the literature of the middle ages it may generally be said, as Montgomery admirably remarks,* that it was "voluminous and vast. Princes, nobles, and even priests, were then often ignorant

* Lectures on Poetry.

of the alphabet. The number of authors was proportionately small, and the subjects on which they wrote were of the driest nature in polemics—such were the subtleties of the schoolmen; of the most extravagant character in the paths of imagination—such were the romances of chivalry, the legends and songs of troubadours; and of the most preposterous tendency in philosophy, so called—such were the treatises on magic, alchemy, judicial astrology, and the metaphysics.

"To say all that could be said on any theme, whether in verse or prose, was the fashion of the times; and as few read but those who were devoted to reading by an irresistible passion or professional necessity—and few wrote but those who were equally impelled by an inveterate instinct—great books were the natural produce of the latter, who knew not how to make little ones; and great books were requisite to appease the voracity of the former, who, for the most part, were rather gluttons than epicures in their taste for literature. Great books, therefore, were both the fruits and the proofs of the ignorance of the age: they were usually composed in the gloom and torpor of the cloister, and it almost required a human life to read the works of an author of the first magnitude, because it was nearly as easy to compound

as to digest such crudities. The common people, under such circumstances, could feel no interest in and derive no advantage from the labors of the learned, which were equally beyond their purchase and their comprehension. Those *libri elephantini* (like the registers of the Roman citizens, when the latter amounted to millions) contained little more than catalogues of things, and thoughts, and names, in words without measure, and often without meaning worth searching out; so that the lucubrations, through a thousand years, of many a noble, many a lovely mind, which only wanted better direction how to unfold its energies or display its graces, to benefit or delight mankind, were but passing meteors, that made visible the darkness out of which they rose, and into which they sank again, to be hid for ever."

Long had the monks been accustomed to string together their miserable rhymes in barbarous Latin, by hundreds and thousands; but it was not till towards the close of the fourteenth century that the first genuine English poet appeared. This was Geoffrey Chaucer, who has been styled the father of English poetry. He was the first great improver and reformer of our language: Spenser spoke of his writings as "the

well of English undefiled;" and he is entitled to high regard for those "ditees glad," through which he

> "Made first to distylle and rayne
> The gold dew-drops of speche and eloquence
> Into our tongue."

With the works of Chaucer, Caxton became doubtless acquainted in his early days, most probably through the medium of the chanting of minstrels, a considerable part of our old poetry being composed with the intention of being recited and not read. It is evident that the persons now alluded to led their contemporary poets to practice a particular species of composition; and as they went hither and thither at a time when reading and writing were rare accomplishments, they were the principal medium of communication between authors and the public. They were a numerous body a century before the time of Chaucer, and were most indefatigable in wandering up and down the country, chanting romances, and singing songs and ballads to the harp, the fiddle, and also to more humble and less artificial instruments. Through this medium, Caxton, as we have observed, probably became acquainted with the works of Chaucer, and

of Gower also, who lived some time before the period of his youth.

Caxton was apprenticed to Robert Large, a member of the Mercers' Company, who was one of the sheriffs of London in 1430, and lord mayor in 1439–40. He died in the latter year. It may be inferred that Caxton served his apprenticeship with fidelity, since his master bequeathed to him, as an expression of esteem, a legacy of twenty marks, which was, at that period, no inconsiderable sum. In possession of this amount, he left his native land, having acquired an intimate acquaintance with trade, and embarking in the character of a merchant, agent, or factor, he occasionally resided for many years in Brabant, Flanders, Holland, and Zealand.

Great commercial importance was attached to the manuscripts which then supplied the place of books. The trade in them was largely conducted by the monks, who, as they were the principal transcribers of manuscripts, so they were also the only booksellers; and works being scarce, they sold them for very large prices. Among other facts equally astonishing, it is stated that a learned lady, the countess of Anjou, gave for the Homilies of Haimon, bishop of Halberstadt, two hundred sheep, five quarters of

wheat, and the same quantity of rye and millet. One reason for so large a sum being paid for manuscripts, appears to have been the skill, labor and taste expended on their execution. One work, "The Book of the Passion of our Lord Jesus Christ," for example, consists of the finest vellum, the text being cut out, instead of being inscribed on each leaf, and, being interleaved with blue paper, it was read with perfect ease. For this curiosity—the work probably of some ingenious and laborious English monk—the emperor Rodolph II., of Germany, offered 11,000 ducats. At a visitation of the treasury of St. Paul's cathedral in the year 1295, there were found twelve copies of the Gospels, all adorned with silver, and some with gilding, pearls, and gems, and one with eleven so-called relics, which were let into the plates of precious metal surrounding each page.

The trade in manuscripts was revived and extended on the establishment of universities in different parts of the Continent; and, in 1259, the sellers of them became so numerous in Paris, as to be the objects of special regulations. We read of *librarii*, the brokers and agents for the sale and loan of manuscripts; and of *stationarii*, the sellers and copiers of manuscripts, who were so

called from having stations at markets and in various parts of cities. One object of the law referred to, was to regulate the prices charged by these persons, which had become enormous. But the most profitable part of the business appears to have been the lending of books, which were so valuable that security was taken for their safe return.

Bookselling in Paris—then the chief seat of learning—seems to have thus been a profitable calling between the twelfth and fifteenth centuries. But wherever universities were established, booksellers also resided, especially in Vienna, Palermo, Padua, and Salamanca. Gradually they spread themselves over less learned places, and at length the *librarii* and *stationarii* exercised their vocations in most of the larger European towns. There is reason to suppose that other persons entered into their trade; for "it is pretty certain," says Dibdin, "that mercers, in the time of Caxton, were general merchants, trading in all kinds of goods, and that they united a love of literature and of books with their other multifarious concerns. Hence, probably, Caxton acquired his passion for books and learning—a passion which seems never to have deserted him."

That Caxton was not unknown at the court of England, is evident from his being appointed, in the year 1464, one of two commissioners to conclude a treaty of trade and commerce between Edward IV., and Philip, Duke of Burgundy, surnamed "the good." This employment appears to have led to another; for, about four years after, Margaret Plantagenet, the sister of the sovereign, was married to the young duke of Burgundy, on which occasion Caxton formed one of her retinue.

Referring to this period of his life, he afterwards said, in allusion to the "Recuyel of the Historyes of Troye," "When I remember that every man is bounden, by the commandment and counsel of the wise man, to eschew sloth and idleness, which is mother and nourisher of vices, and ought to put myself into virtuous occupation and business, then I, having no great charge or occupation, following the said council, took a French book and read therein many strange, marvellous histories, wherein I had great pleasure and delight, as well for the novelty of the same, as for the fair language of the French, which was in prose so well and compendiously set and written, methought I understood the sentence and substance of every matter. And for so

much as this book was new and late made and drawn into French, and never had been seen in our English tongue, I thought in myself it would be a good business to translate it into our English, to the end that it might be had as well in the *royaume* of England as in other lands, and also for to pass therewith the time, and thus concluded in myself to begin this said work, and forthwith took pen and ink, and began boldly to run forth, as blind Bayard, in this present work."

The work thus begun was discontinued for nearly two years. At length, his patroness the duchess sent for him, and on his producing the part he had finished, she examined three or four leaves, criticising his English; but so far from discouraging him, she desired him to resume his labors. Unwilling to incur her displeasure, he renewed his task, and speedily brought it to a conclusion. It was begun in 1468, and was finished in 1471. The work was kindly received by the duchess, who liberally rewarded the translator.

There is reason to conclude, that, in completing this work, Caxton had a larger circulation of it in view than could be met by transcription. That he contemplated its use in his own country,

as well as abroad, is clear from his words: — "I thought in myself it would be a good business to translate it into our English, to the end that it might be had as well in the *royaume* of England as in other lands." It is natural, too, to conceive him, fond of literature as he was, and, withal, a man of leisure, intensely interested in the new art which was now springing up, and making himself acquainted, so far as circumstances allowed, with its practical details.

His attention would also be directed specially to England, by circumstances that occurred while engaged in his translation. Edward IV. had arrived in Bruges, a fugitive from civil war, "attended by seven or eight hundred men, without any clothes but what they were to have fought in, and with no money in their pockets;" while he "was forced to give the master of the ship, for his passage, a gown lined with martens." Caxton was honored with the confidence of the celebrated earl Rivers, the sovereign's brother-in-law; and as, after an exile of a few months, Edward again swayed the sceptre of England, it seems in the highest degree probable that Caxton anticipated the favor of the royal patronage in his native land.

That he actually printed the work he had

translated, is placed beyond all dispute. He says towards the conclusion, "Thus end I this book, and forasmuch as in writing of the same my pen is worn, my hand weary, and my eyes dimmed with overmuch looking on the white paper, and that age creepeth on me daily, and also, because I have promised to divers gentlemen, and to my friends, to address to them, as hastily as I might, this said book, therefore I have practiced and learned, at my great charge and expense, to ordain this said book in print after the manner and form as ye may here see, that it is not written with pen and ink, as other books be, to the end that every man may have them at once; for all the books of this story named the 'Recuyel of the Historyes of Troye,' thus imprinted, as ye here see, were begun in one day, and also finished in one day."

All who are conversant with old books will recognize here the style and language of the first printers. At the end of each of the first works issued from Mentz, they apprised the public that they were not drawn or written by a pen, but made by a new art and invention of printing or stamping them by characters or types of metal set in forms. Caxton says, moreover, the "work was begun in Bruges, and continued in Ghent,

and finished in Cologne, in time of the troublesome world, and of the great divisions being and reigning, as well in the kingdoms of England and France as in all other places universally through the world, that is, to wit, the year of our Lord one thousand four hundred and seventy-one."

To say that Caxton *printed* his book is to describe, in few words, a work of great complexity and difficulty. To accomplish this he must have had types, either by buying them ready for use, or by procuring the moulds that would yield them; and when obtained, it would be no easy task duly to arrange them. Then a press was to be obtained—doubtless a very humble affair, a mere board, acted on by a screw, like a cheese-press or a napkin-press, so that the types would be pressed after they were inked, slowly, laboriously, and uncertainly. Ink, too, had to be made, and the balls by which it could be applied—a rude and disagreeable process, yet one that was continued for a long time, and which is even now in use.

Assuredly, it was an arduous affair to be compositor and pressman under such circumstances, and a due consideration of the matter will increase our sense of Caxton's ability and perse-

verance. "The Histories of Troy" would have no attraction for the reader in the present age; but far different was it in the days of Caxton; while the earliest work that issued from his press cannot but be regarded with lively interest, as the first sheaf of an extensive harvest, into which multitudes in after days have thrust in the sickle.

CHAPTER III.

THE settlement of Caxton in England, for the practice of the typographical art which has shed so much honor on his name, is generally admitted to have taken place in the year 1474, towards the close of the reign of Edward IV.

It has, however, been argued by a writer named Atkyns, that printing was a royal prerogative, and that the art was brought into England at the expense of the crown, through another channel than Caxton. "Thomas Bourchier, Archbishop of Canterbury," he says, "moved the then king, Henry VI., to use all possible means for procuring a printing mould (for so it was then called) to be brought into this kingdom. The king, a good man, and much given to works of this nature, readily hearkened to the motion; and taking private advice how to effect this design, concluded it could not be brought about without great secrecy, and a considerable sum of money given to such person or persons as would draw off some of the workmen from Haarlem in Holland, where John Guttenberg had newly in-

vented it, and was himself personally at work. It was resolved that less than one thousand marks would not produce the desired effect; towards which sum the said Archbishop presented the king with three hundred marks.

"The money being now prepared, the management of the design was committed to Mr. Robert Turnour, who then was keeper of the robes of the king, and a person most in favor with him of any of his condition. Mr. Turnour took to his assistance Mr. Caxton, a citizen of good abilities, who, trading much with Holland, might be a creditable pretence, as well for his going as for his staying in the Low Countries. Mr. Turnour was in disguise, his beard and hair shaven quite off, but Mr. Caxton appeared known and public.

"They having received the sum of one thousand marks, went first to Amsterdam, then to Leyden—not daring to enter Haarlem itself, for the town was very jealous, having imprisoned and apprehended divers persons, who came from other parts for the same purpose. They stayed till they had spent the whole one thousand marks in gifts and expenses. So, as the king was fain to send five hundred marks more, Mr. Turnour having written to the king that he had almost done his work, a bargain, as he said, being struck by him and two Hollanders for bringing off one

of the workmen, who should sufficiently discover and teach the new art. At last, with much ado, they got off one of the under workmen, whose name was Frederick Corsells, or rather Corsellis; who, late one night, stole from his fellows in disguise, into a vessel prepared before for that purpose; and so the wind, favoring the design, brought him safe to London. It was not thought so prudent to set him to work at London; but by the Archbishop's means, who had been vice-chancellor, and afterwards chancellor of the university of Oxon, Corsellis was carried with a guard to Oxon, which constantly watched to prevent Corsellis from any possible escape, till he had made good his promise, in teaching how to print. So that at Oxford printing was first set up in England."*

Anthony Wood, repeating the story, adds: "And thus the mystery of printing appeared ten years sooner in the University of Oxford than at any other place in Europe, Haarlem and Mentz excepted." It is unnecessary to dwell on the inconsistencies of this romantic tale, or its inaccuracies—as when it describes John Guttenberg as laboring at "Haarlem in Holland." It is possible that Henry VI. might have seen the Maza-

*History of the University of Oxford.

rine Bible, of which Mr. Hallam says: "It is a very striking circumstance, that the high-minded inventors of this great art tried at the very outset so bold a flight as the printing an entire Bible, and executed it with astonishing success. It was Minerva leaping on earth in her divine strength and radiant armor, ready at the moment of her nativity to subdue and destroy her enemies." The story of Atkyns also wants confirmation. He says, indeed, "A certain worthy person did present me with a copy of a record and manuscripts in Lambeth House, heretofore in his custody, belonging to the see, and not to any particular Archbishop of Canterbury. The substance whereof was this: (by *this* he refers to the narrative above given) — though I hope, for public satisfaction, the record itself, in its due time, will appear." But that time never came; and thus the tale wants the support which it was intimated it would one day receive.

Atkyns speaks also of a book "printed at Oxon, A. D. 1468, which was three years before any of the recited authors would allow it (printing) to be in England." In this statement, his position is somewhat improved. There is a little book, which, little thought of before, fell under the notice of the curious about the time of the

Restoration — a book which actually bears date at Oxford, in the year 1468, copies being yet extant. It is a small quarto, of forty-one leaves, entitled "Expositio Sancti Jeronimi in Symbolum Apostolorum ad Papam Laurentium." But this was a book produced from *wooden* types—a mode practiced long before the invention of Guttenberg, and clearly distinguishable from the *metal* types, which are traceable to him, and which Caxton was the first to employ in England. A due consideration of the vast difference between the two modes of producing impressions, would have prevented the controversy which has been waged on this subject.

As to the site of the first printing-press in England, an old writer says it was "St. Ann's, an old chapel, over against which the lady Margaret, mother to king Henry VII., erected an almshouse for poor women, which is now (in Stowe's time) turned into lodgings for singing men of the college. The place wherein this chapel and almshouse stood was called the Eleemosynary, or Almonry, now corruptly the Amlry (Aumlry),* for that the alms of the abbey were there distributed to the poor; in which the abbot

*It was so called within the last fifty years.

of Westminster erected the first press for book printing that ever was in England, about the year of Christ 1471, and where William Caxton, citizen and mercer of London, practiced it."

It is indeed very probable that Caxton, after the manner observed in other monasteries, set up his press near one of the chapels attached to the aisles of Westminster Abbey. The supposition has, therefore, been indulged—

"Each printer hence, howe'er unbless'd his walls,
E'en to this day, his house a CHAPEL calls."

But no remains of so interesting a place can now be ascertained, and there is a strong presumption that the first printing-office was demolished to make room for the building of the far-famed chapel of Henry VII. Caxton's office, it is said, was at a subsequent period removed into King-street, just by, but its precise locality cannot be now pointed out.

Bagford says, "Caxton's first book printed in the Abbey was 'The Game of Chess,' a book in those times much in use with all sorts of people, and in all likelihood first desired by the abbot, and the rest of his friends and masters." It was a translation by himself of a work written by Dacciesole, a Dominican friar, so early, according to Hyde, as 1200. Of it Caxton says, "It is

full of wholesome wisdom, and requisite unto every state and degree;" a statement very inapplicable, we might have thought, to a work of this character. It appears, however, to have blended with instructions for playing the game, counsels which would enable the people, according to Caxton's notions, "to understand wisdom and virtue:" he therefore dedicates it to the Duke of Clarence, saying, "Forasmuch as I have understood and known that you are inclined unto the commonweal of the king, our said sovereign lord, his nobles, lords, and common people of his noble realm of England, and that ye saw gladly the inhabitants of the same informed in good, virtuous, profitable, and honest manners."

Of the character, reception, and effect of the works which subsequently issued from Caxton's press, Warton* gives the following account:— "By means of French translations, our countrymen—who understood French better than Latin—became acquainted with many useful books, which they would not otherwise have known. With such assistances, a commodious access to the classics was opened, and the knowledge of ancient literature facilitated and familiarized in

* History of Poetry.

England at a much earlier period than is imagined, and at a time when little more than the productions of speculative monks and irrefragable doctors could be obtained or were studied."

How confused and barren the field of instruction was in the most celebrated schools of the age, it is difficult now adequately to conceive. In philosophy, nothing was studied but mathematics and logic, and the latter was taught in a trifling and useless manner, from a work attributed to Augustine. Neither preceptor nor pupil desired nor dared greater things. The circle of instruction, or the liberal arts, as the term was then understood, consisted of two branches, the *trivium* and the *quadrivium*. The *trivium* included grammar, rhetoric, and dialectics: the *quadrivium* comprehended music, arithmetic, geometry, and astronomy. He who was master of these—as then taught—was thought to have no need of a preceptor to explain any books or to solve any questions which lay within the compass of human reason, the knowledge of the *trivium* being supposed to have furnished him with a key to all languages, and that of the *quadrivium* to have opened to him the secret laws of nature.

The scholastic questions were called *Questiones Quodlibeticæ*, and were generally so ridiculous,

that we have retained the word *quodlibet* in our vernacular style, to express any thing absurdly subtle. They distinguished *universals*, or what we call abstract terms, by the *genera* and *species rerum;* and they never could decide whether these were *substances* or *names;* that is, whether the abstract idea we form of a horse was not really a *being* as much as the horse we ride. A favorite topic of discussion, and one which the acutest logicians never resolved, was, "When a hog is carried to market with a rope tied about its neck, which is held at the other end by a man, whether is the hog carried to the market by the rope or the man?"

In the view of these circumstances, Warton continues, referring to what he had just styled "many useful books:" "When these authors, therefore, appeared in a language almost as intelligible as the English, they fell into the hands of illiterate and common readers, and contributed to sow the seeds of a national erudition and to form a popular taste. Even the French versions of the religious, philosophical, historical, and allegorical compositions of those more enlightened Latin writers who flourished in the middle ages, had their use till better books came into vogue: pregnant as they were with absurdities, they com-

municated instruction on various new subjects, enlarged the field of information, and promoted the love of reading, by gratifying that growing literary curiosity which now began to want materials for the exercise of its operations."

"These French versions," Warton adds, "enabled Caxton, our first printer, to enrich the state of letters in this country with many valuable publications. He found it no difficult task, either by himself or the help of his friends, to turn a considerable number of these pieces into English, which he printed. Ancient learning had as yet made too little progress in our country, to encourage this enterprising and industrious artist to publish the Roman authors in their original language; and had not the French furnished him with these materials, it is not likely that Virgil, Ovid, Cicero, and many other good writers, would, by the means of his press, have been circulated in the English tongue so early as the close of the fifteenth century."

Of all Caxton's contemporaries, the Lord Rivers appears to have been the only one who rendered him any literary assistance. One of his works, "The Moral Proverbs of Christine de Pisa," a metrical translation of a little French poem, Caxton dismisses with the following words:—

"Go thou little quire and recommend me
Unto the good grace of my special lord
Th' earl Rivers, for I have emprinted thee
At his commandment, following every word
His copy, as his secretary can record,
At Westminster, of Feuerer the xx day,
And of King Edward the xvii day vraye."

This friend and patron of Caxton had no ordinary trials to endure. When Edward IV. was one day hunting in Northamptonshire, and paid a visit to the duchess-dowager of Bedford, her grace's daughter Elizabeth, the widow of Sir John Grey, of Groby, who had fallen on the Lancastrian side in the second battle of St. Albans, came and threw herself at the monarch's feet, imploring him to reverse her husband's attainder in favor of her innocent children. Captivated by her elegant form, her graceful and winning manners, and her language and sentiments, marked as they were by propriety and wit, the sovereign eventually married her. This led to the elevation of her family, and to the creation of her father — a baron in the late reign — as Earl Rivers, amidst great jealousy on the part of the Nevilles, who had expected to enjoy a monopoly of power under the prince whom they had placed on the throne. An insurrection

of the peasantry soon after broke out in Yorkshire, a county in which the influence of the Nevilles chiefly lay. After being defeated, and witnessing the capture and execution of their leader, other parties placed themselves at the head of the insurgents, requiring the removal of the Woodvilles—the family of the Earl Rivers. The King was in great perplexity: he wrote to Clarence and Warwick, ordering them to hasten to him from Calais. Lord Herbert advanced from Wales with eight thousand men, and Lord Stafford joined him at Banbury with five thousand. The next day the rebels fell on Herbert at Edgecote, and killed him, with five thousand of his followers. In the pursuit which followed this engagement, the victors found Lord Rivers and his son John in the forest of Dean, and brought them to Northampton, where they were executed, by a real or pretended order from Clarence and Warwick.

It was after this catastrophe, in which his father and brother had fallen, that the second Lord Rivers wrote his book entitled "Cordial," which Caxton says was delivered to him "for to be imprinted and so multiplied to go abroad among the people, that thereby more surely might be remembered the last four things undoubtedly

coming." A third work of his lordship, published by Caxton, was the "Dictes and Sayings of the Philosophers." Lord Rivers, however, had not reached forty years of age when death came to him in a terrific form. He was murdered in Pomfret Castle, by order of Richard III.

It is not our purpose to describe in detail the labors of Caxton: we shall satisfy ourselves, therefore, with the summary statement of Dr. Dibdin: "Exclusively of the labors attached to the working of his press as a new art, our typographer contrived, though well stricken in years, to translate not fewer than five thousand closely printed folio pages. As a translator, therefore, he ranks among the most laborious, and, I would hope, not the least successful of his tribe. The foregoing conclusion is the result of a careful enumeration of all the books translated as well as printed by him; which, (the translated books,) if published in the modern fashion, would extend to nearly twenty-five octavo volumes."

The first printed books had some marked peculiarities, apart from those which, if described, would only be understood by persons who are well acquainted with the technicalities of the art. Thus, they were generally either large or small folios, or at least quartos: the lesser sizes not

being in use. Some of them have no titles, nor number of pages, nor were there in any divisions into paragraphs. The character employed was purposely designed to imitate the handwriting of the time: the words were printed so closely together that to read was difficult and tedious, while the inattentive reader was frequently led into mistakes.

In the early ages of printing, the uniform character employed was an imitation of the old Gothic or German, from which our old English was formed—a character now obsolete in the west of Europe, except for the purpose of printing ancient works in fac-simile, or giving variety to other forms of typography. In Germany, however, and the states and kingdoms which lie round the Baltic, works for ordinary use are still printed in type of this description, which is popularly known as German text.

The orthography employed by the early typographers was various, and often arbitrary. They made use of abbreviations, which in time grew so numerous, that a key was published as necessary to explain them. An oblique stroke answered the purpose of our comma. No capital letters were used to begin a sentence, or for proper names of men or places. The early printers, too,

left blanks for the places of titles, initial letters, and other ornaments, that they might be supplied by ingenious artists. Such ornaments were exquisitely fine, and curiously variegated with the most beautiful colors, and even with gold and silver. The margins were likewise adorned with a variety of figures of saints, birds, beasts, flowers, and monsters, which sometimes had reference to the contents of the page, though often it is impossible to trace between them and the author's subject the most remote analogy. These embellishments were very costly; but there were others of an inferior kind, at a proportionately lower expense.

Nor should it be overlooked, that the early printer was a bookbinder also, placing his leaves literally between *boards*, and making some books so heavy as to give rise to the saying: "No man can carry them about, much less get them into his head."

It has sometimes been asked: "How was it that Caxton did not print the Bible?" And the question is natural, especially as this was the first great work of the typographic art, with which he must have been fully acquainted. Nor were the Sacred Scriptures, as in the edition of Guttenberg and Fust, restricted to the Latin tongue.

Before the days of Wycliffe, portions of them had been translated into English, and passed, probably, in some instances, into the hands of wealthy and distinguished persons among the laity; but it remained for the English reformer to form the sublime purpose of translating the whole of them from Latin into English, and to carry it into full accomplishment.

In venturing to take this step, Wycliffe, as is well known, exposed himself to the displeasure of the priests. Knighton, the canon of Leicester, did not hesitate to say: "Christ delivered his doctrine to the doctors of the Church, that they might minister to the laity and weaker persons, according to the state of the times, and the wants of men. But this Master John Wycliffe translated it out of Latin into English, and thus laid it more open to the laity, and to women who could read, than it had formerly been to the most learned of the clergy, even to those of them who had the best understanding. And in this way the gospel pearl is cast abroad, and trodden under foot of swine; and this, which was before precious to clergy and laity, is rendered, as it were, the common jest of both. The jewel of the Church is turned into the sport of the people; and what was hitherto the principal gift of

the clergy and divines, is made for ever common to the laity."

In the feeling thus discovered by Knighton, the English clergy fully sympathized; for when assembled in council, under the presidency of Archbishop Arundel, they issued an enactment as follows: "The translation of the text of the Holy Scriptures out of one tongue into another is a dangerous thing, as St. Jerome testifies, because it is not easy to make the verse in all respects the same. Therefore we enact and ordain that no one henceforth do, by his own authority, translate any text of the Holy Scriptures into the English tongue, or any other, by way of book or treatise; nor let any such book or treatise, now lately composed in the time of John Wycliffe aforesaid, or since, hereafter to be composed, be read in whole or in part, in public or in private, under the pain of the greater excommunication." It is to this enactment that Sir Thomas More attributes the conduct of Caxton: "On account," he says, "of the penalties ordered by Archbishop Arundel's institution, though the old translations that were before Wycliffe's days remained lawful, and were in some folks' hands had and read, yet he thought no printer would lightly be so hot to put the Bible in print at his own charge, and

then hang upon a doubtful trial whether the first copy of his translation was made before Wycliffe's days or since; for if it were made since, it must be approved before the printing."

The labors of Caxton closed with his translation from the French into English of a work which thus begins: "When it is so, that what a man maketh or doeth, it is made to come to some end, and if the thing be good or well made it must needs to come to good end; then, by better and greater reason, every man ought to intend in such wise to live in this world, in keeping the commandments of God, that he may come to a good end. And then out of this world, full of wretchedness and tribulations, he may go to heaven unto God and his saints unto joy ever durable." In this work he was engaged on the last day of his life, the 15th of June, 1490, when he was about eighty years of age.

This work was entitled: "The Art and Craft to Know Well to Die." To know well to die! This is indeed a knowledge of all others the most desirable. Man is a guilty sinner: his heart and his life are stained with countless transgressions: he has violated the holy and perfect law of God; and in consequence is exposed to ruin and everlasting woe. To know, then, how to have solid

peace in that hour which ushers the soul from time to eternity, must be unspeakably important. This knowledge the Word of God supplies. Man is guilty, but the Saviour hath made an atonement: he hath come, as foretold by prophecy, to finish transgression, and make an end of sin. He hath borne the curse of a violated law, and now repentance and remission of sin, through faith in his blood, are freely proclaimed. The man who trusts in the Saviour with a living faith; who has surrendered himself up to be sanctified by his Holy Spirit; who, from a principle of love, takes up his light and easy yoke, and walks in obedience to all his holy will—that man has learned how to die well. When he passes through the dark valley, the Saviour shall be with him to give him light, and shall enable him to exclaim: "O death, where is thy sting? O grave, where is thy victory? The sting of death is sin; and the strength of sin is the law. But thanks be to God, which giveth us the victory through our Lord Jesus Christ."

CHAPTER IV.

ENGLAND'S first printer was now removed from the world, but "the office" in which he had toiled even till the coming of the messenger of death, was not to be closed, or appropriated to different purposes. Wynken de Worde, who was born in the dukedom of Lorraine, and who accompanied Caxton to England, continued with him, in some capacity, till the death of the latter. He was Caxton's successor, too, in his house at Westminster, and styled himself "Printer to Margaret, etc., the king's grandame." He printed the acts of Parliament with the royal arms for some years, using an imprint cut and seal similar to what Caxton had employed. Some of the acts of Parliament bear the imprint: "Fleet Street, at the sygn of the Sonne, by Wynken de Worde."

It is probable that he kept both shops for some time, where, by himself and his servants, he performed all parts of a printer's business, and also supplied other printers in the metropolis. He is said to have printed several Latin as well as English volumes, and to have done so till 1533, if not

beyond that time. No Greek works appear, however, to have issued from his press. Though the immediate successor of Caxton, he made many improvements in the art. On commencing business for himself, his first care was to cut a new set of punches: he sunk these into matrices, and cast several sorts of printing letters, which he afterwards used. He was the first English printer who introduced the Roman letter into England, employing it to distinguish any thing remarkable. So true was the type he used, and so well have its impressions stood the test of time, that it is not considered to have been since excelled.

Most of his books now remaining were printed in St. Bride's parish, Fleet street, at the sign of the Sun. The exact situation of his place of business is not, however, easily determined. His residence is usually said to have been "over against the conduit." This conduit, founded by Sir William Eastfield, was at the south end of Shoe-lane. It was rebuilt in 1582, but was superseded by the introduction of water from the New River into London. Its remains perished in the Great Fire of London.

The art of printing was speedily extended to other places in England besides London. Theodoric Rood, a native of Cologne, practiced it in

the city of Oxford in 1480, and continued to do so for several years. Into the University of Cambridge it was introduced at a very early period after its rise in England, but it is uncertain who were the persons that carried the art thither. A schoolmaster conducted a printing-press at St. Albans so early as 1480, and many others were set up in different places: among which may be mentioned, York, Canterbury, Worcester, Ipswich, and Norwich, besides Southwark, Greenwich, and Mousley, near Kingston. Two copies of a Breviary of the Church of Aberdeen, printed thirty-five years after the first labors of Caxton at Westminster, have been found. The Common Prayer was printed in Dublin by Humphrey Powell, in quarto, black letter, in 1551. Previously, and even subsequently to that period, the authors of Ireland caused their works to be printed abroad.

The first Bible with a date is in Latin, and was printed, as we have seen, on vellum, in 1462, by Fust and Schœffer. The first book in Greek characters is a "Grammar" of the Greek language, bearing date 1476. "Æsop's Fables" was the first Greek classic printed: it was executed at Milan, about 1480. The first Latin classic printed was Cicero's "Offices:" it appeared in

1465, the work of Fust and Schœffer. One of the first books printed with diagrams was "Euclid's Geometry," in Latin: it was printed at Venice, by Ratdoldt, in 1482. The works of Virgil, printed there by Aldus, in 1501, formed the first book printed in italic types, and was the result of the earliest attempt to produce cheap books. One of the earliest books of travels, and the first illustrated with folding plates, was printed at Mentz in 1486. It is, like all the rarities now enumerated, in the British Museum. The earliest book in which engravings are found is a copy of Dante, printed at Florence, in 1481.

An ingenious person named Blaew is entitled to particular notice in a history, however brief, of the printing-press. He served his apprenticeship as a joiner, but being of an inquisitive disposition, he rambled from Amsterdam to Denmark, at a time peculiarly favorable to his purposes. There the celebrated Tycho Brahe had established his astronomical observatory, and Blaew was employed in making his mathematical instruments. It is said that in these he made many improvements, and that all or most of the sidereal observations published in Tycho's name, were due to him.

To gratify Blaew, Tycho gave him copies of

them before they were published to the world; and with these he went to Amsterdam, and practiced the making of globes. As his trade increased, he found it necessary to deal in geographical maps and books, and became so particular as to his plates, that many of them were engraved with his own hand. He also set up a printing-office; and being sensible of the inconveniences attending the rudely constructed typographical machine which had now been in use about a hundred years, he made in it many considerable improvements. Having constructed nine printing-presses, he bestowed on them the names of the nine muses. The excellence of their workmanship soon became known, so that, in a few years, presses of his construction became almost general throughout the Low Countries, and from thence were introduced into England.

Special honor is also due, in connection with the history of the art of printing, to Aldus Manutius. He received a learned education, passed his early life in literary pursuits, and in the society of some of the most distinguished scholars of his time, and was forty years of age before he set up his printing-office at Venice. His means were limited, and he had much to suffer from the distracted state of his country. He was even

obliged to retire from Venice altogether for twelve months; and on quitting Milan, where he had found a refuge, he was seized as a spy, and consigned to a dungeon, from whence he only obtained deliverance by the interposition of a friend, who happened to be the vice-chancellor of the Milanese senate. And yet, during his career of twenty-six years as a printer, he gave to the world editions of nearly all the Greek and Roman authors then known to exist. Nor did these publications involve ordinary labor; for in almost every instance he transcribed the text from manuscripts, which it required great learning, patience, and sagacity to decipher, and selected from the various readings those which he regarded as the most correct. He, therefore, acted the part of editor, as well as that of printer and publisher. Aldus Manutius was also the author of several works of great erudition. Among these were grammars of the Greek and Latin languages, and a dictionary of them, forming a folio volume, the first of the kind that had ever been prepared. In the first years also of his residence at Venice, he delivered several courses of lectures on Greek and Roman literature, and founded a literary association—the Aldine Academy, which obtained for itself, from the learning of its members, a

high celebrity. He also invented the beautiful letter now generally in use, and known by the name of Aldine, or Italic.

The Estiennes or Stephenses, of France, were celebrated as printers for nearly a hundred and fifty years. Robert Stephens was born at Paris in 1503, and for some time acted as chief manager of the establishment of his father-in-law, Simon de Colines, where he superintended an edition of the New Testament. The publication of this work was a grave offence to the doctors of the theological college—the Sorbonne—and excited suspicions of his favoring Protestantism, to which he afterwards openly adhered. He commenced business as a printer in his native city, in 1526.

Like Manutius, he was greatly distinguished by his scholarship. The works which issued from his press were remarkable for their exquisite typography and their great correctness. It is said he was accustomed, on many occasions, to exhibit the proof-sheets for public inspection, and to offer a reward for any error which might be detected in them. To him has been attributed the divisions of the Scriptures into chapters and verses; but his claims in this respect have been overstated. The invention of chapters has been as-

cribed by some to Lanfranc, who was Archbishop of Canterbury in the reigns of William the Conqueror and William II. Others attribute it to Stephen Langton, who was Archbishop of that see in the reigns of John and Henry III. But the real author of this division was Cardinal Hugo, who flourished about the middle of the thirteenth century, and wrote a celebrated Commentary on the Scriptures.

Robert Stephens was, however, the first inventor of the verses into which the New Testament is now divided, and introduced them in his edition of it, published in the year 1551. The arrangement was soon adopted into all other versions of the New Testament; but it may be observed, that he placed the figures in the margin, without forming every verse into a distinct paragraph. The method now commonly in use was first exhibited in the Geneva English Bible, printed about the year 1560.

Henry, the eldest son of Robert Stephens, was one of the most learned men of his time: his mother, the daughter of Iodocus Badius, also a printer, was a woman of extraordinary acquirements, and used the Latin language in common conversation with the rest of the family. Henry, who gave proof of his predilection for literature

from his earliest years, soon made himself familiar with Greek, and, at the age of eighteen, assisted his father in collating the manuscripts of Dionysius. He then travelled in Italy, whence he brought the Odes of Anacreon, which he afterwards published; and having visited England and the Netherlands, he returned to Paris.

The death of Francis I. exposed the elder Stephens to peril as a Protestant, and he, in consequence, retired to Geneva, where he resumed his business as a printer. Henry accompanied his father to that city, but returned to Paris, where he established a printing-office in 1557, and began printing the works of various Greek authors, the manuscripts of which he had collected during his travels; all being corrected by himself, and enriched with annotations from his own pen. In this way, like his parent, he obtained distinction, not only for his ability and taste as a typographer, but for his thorough acquaintance with classical lore.

He attained, however, the pinnacle of his fame by the publication of his Thesaurus—a dictionary of the Greek language, which was the result of twelve years' devoted application. This work, unhappily, involved him in serious pecuniary difficulties, with which he struggled unsuccess-

fully for several years. Its sale was not sufficiently rapid to reimburse him for its cost, and when he was looking for the time at which it might be expected to do so, his hope was suddenly extinguished by a circumstance which he had not anticipated. A person named Scapula, employed in his office, secretly and treacherously abridged the Thesaurus, and ruined its sale by a cheaper and briefer edition of it. It is considered by some, however, that Scapula's work was an original composition.

With unwearied diligence, Stephens continued his labors for some years as an author and a printer, sustained by the promises of Henry III., which brought upon him many bitter disappointments. The death of his wife, whom he tenderly loved, increased his sorrows, and leaving Paris, he spent several years in wandering from one place to another—now at Orleans, again at Paris, and afterwards in Germany, Switzerland, and Hungary. He died in an almshouse at Lyons, where he was attacked by disease, at the age of seventy.

A foreigner named Wolfe, a native either of Germany or Switzerland, set up a printing-house in St. Paul's Churchyard, at the sign of the Brazen Serpent, which was a device used by

foreign printers. He followed his business with great reputation for many years, and published most of the pieces of Archbishop Cranmer.

Wolfe was the first who had a patent, dated A. D. 1543, for being printer to the king in Latin, Greek, and Hebrew; thus being authorized to be his majesty's bookseller and stationer, and to print all kinds of books in these languages, and also charts, maps, and whatever might at any time be useful or necessary. He was permitted to exercise this office by himself, or by sufficient deputies; and enjoyed an annuity of twenty-six shillings and eightpence, besides all other profits and advantages belonging to his office, during his life. All other booksellers and printers were forbidden to sell or print any books printed by him at his own charge, or in his name, on pain of forfeiting the books. It appears he desisted from printing during the reign of Queen Mary, and spent his time in collecting materials for his English chronicles, afterwards digested and printed by Holinshed.

"Every branch of modern science," says an eminent living writer,* "abounds with instances of remote correspondences between the great

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* Isaac Taylor.

system of the world and the artificial condition to which knowledge raises man. If these correspondences were singular or rare, they might be deemed merely fortuitous, like the drifting of a plank athwart the track of one who is swimming from a wreck. But when they meet us on all sides and invariably, we must be resolute in atheism not to confess that they are emanations from one and the same centre of goodness. Is it nothing more than a lucky accommodation which makes the polarity of the needle to subserve the purposes of the mariner? Or may it not be safely affirmed, both that the magnetic influence (whatever its primary intention may be) had reference to the business of navigation — a reference incalculably important to the spread and improvement of the human race — and that the discovery and the application of this influence arrived at the destined moment, in the revolution of human affairs, when, in combination with other events, it would produce the greatest effect? Nor should we scruple to affirm that the relation between the earth's axis and the conspicuous star which, without a near rival, attracts even the eye of the vulgar, and shows the north to the wanderer in the wilderness or on the ocean, is in like manner a beneficent arrangement? Those who would spurn the supposition that the celestial

locality of a sun immeasurably remote from our system, should have reference to the accommodation of the inhabitants of a place so inconsiderable as our own, forget the style of the Divine works, which is to serve some greater principal end, compatible with ten thousand lesser or remoter interests."

In connection with these observations, it may be remarked, that the accordance of the art of printing with the spirit of the times which gave it birth, must be regarded as singularly providential. Had the invention been made known at a much earlier period, it might have been disregarded or forgotten, from the mere want of materials on which to exercise it; and had it been, on the contrary, further postponed, it is probable that many works which are now regarded as among the noblest monuments of the human intellect, would have been totally lost. In less than a century from the invention of printing, Copernicus discovered the true theory of the planetary motions; and, in a very few years afterwards, he was succeeded in his astronomical career by the three great precursors of Newton—Tycho Brahe, Kepler, and Galileo. The advances made in other departments of science and literature were also correspondingly rapid.

"For us," says Dugald Stewart, "who have been accustomed from our infancy to the use of books, it is not easy to form an adequate idea of the disadvantages which those labored under who had to acquire the whole of their knowledge through the medium of universities and schools; blindly devoted, as the generality of students must have been, to the peculiar opinions of the teacher, who first unfolded to their curiosity the treasures of literature and the wonders of science. Thus error was perpetuated, and, instead of yielding to time, acquired additional influence in each succeeding generation. But the art of printing, by rendering the taught less dependent on their teachers, and by opening more widely the sources of knowledge, served quickly to break down these ancient barriers, and emancipated the human mind from its bondage."

One instance of that vassalage to prescriptive authority here alluded to, appears in the influence acquired by the writings of Aristotle—an influence which, in some universities, was supported by statutes, requiring the teachers to promise, on oath, that they would foster no other guide in their public lectures. And yet, as Dr. Reid observes, "his writings carry too evident marks of that philosophical pride, vanity, and

envy, which have often sullied the character of the learned. He determines boldly things above all human knowledge, and enters on the most most difficult questions, as his royal pupil, Alexander of Macedon, entered on a battle, with full assurance of success. He delivers his decisions oracularly, and without any fear of mistake. Rather than confess his ignorance, he hides it under hard words and ambiguous expressions, of which his interpreters can make what they please. There is even reason to suspect that he wrote often with affected obscurity, either that the air of mystery might procure great veneration, or that his books might be understood only by the adepts who had been initiated into his philosophy." Deep-seated, however, as was the attachment of the learned to the philosophy of Aristotle, the time had arrived when it was to be shaken to its foundation.

Contemporary with the invention of printing, various events occurred, all calculated to improve the mental condition of the people. Civil wars had diminished the power of the nobles, and the lower classes, who had grievously suffered from their oppressions, began to emerge from vassalage. The policy of the sovereign had also tended to depress the aristocracy, and he restricted the

number of their retainers; and thus, those who had previously spent their time in following some great lord to the wars, or in hanging idly about his gates in time of peace, were driven to apply themselves to industrious efforts, and from helpless dependents became useful subjects. The more general diffusion of wealth and extension of commerce, consequent upon the discovery of the New World, and of the passage to India by the Cape of Good Hope, concurred also with other causes to raise the condition of the middle and lower classes of the community. But for this elevation in their state, the advantages derived from the invention of printing would have been extremely limited, for a certain degree of ease and independence is absolutely necessary to awaken in the mind the desire of knowledge, and to afford leisure for its pursuit. So long, too, as education and books are confined to one privileged class, they only furnish an additional engine for debasing and misleading an inferior one.

In consequence of the revival of letters, towards the close of the fifteenth century, a number of learned Greeks repaired to Italy, where the taste for literature, already introduced by Dante, Petrarch, and Boccaccio, together with the liberal patronage of the illustrious house of the Medici,

secured them a welcome reception. A knowledge of the Greek tongue soon became fashionable; and the learned, encouraged by the rapid diffusion which the art of printing now gave to their efforts, presented the Greek authors, by means of Latin translations, to a still wider circle of readers.

In England, also, literature revived, in consequence of the stimulus given to it by the use of the printing-press. Sir John Fortescue, and a few other writers, have left favorable specimens of prose composition, and their successors made still further improvements in style. Among these Sir Thomas More is entitled to honorable mention, as occupying a distinguished place in the ranks of the literati of his age. So intimate and critical was his acquaintance with the Greek and Latin languages before he had reached maturity, that he wrote and conversed in both of them with elegance and ease. His celebrated work, entitled "Utopia," was quickly translated into most of the European languages. With him, too, must be associated Archbishop Cranmer, Sir Thomas Elyot, and Roger Ascham.

Warton very beautifully and justly compares the appearance of Chaucer in our language, to a premature English spring, after which the gloom

returns, and the birds and blossoms, which have been called forth by a transient sunshine, are nipped by frosts and scattered by storms. The causes of the relapse of our poetry after Chaucer are but too apparent in the annals of English history, which, during the five reigns of the fifteenth century, continue to display only a tissue of conspiracies, proscriptions, and bloodshed. Before the death of Henry VI., it is said, one-half of the nobility and gentry in the kingdom had perished on the field or on the scaffold.

In noticing the rise of English literature, flowing from the introduction of the printing-press, one name is entitled to honorable notice—Henry Howard, Earl of Surrey, and heir apparent to the Duke of Norfolk, whom, however, he did not long survive. He was conspicuous in all the military achievements of the age; and in 1544, as field-marshal, he commanded the English army in an expedition against Boulogne. But the tide of his success was on the ebb. The despot Henry became jealous of his talents and popularity: certain frivolous and groundless charges were preferred against him: the result was a mock trial, and, notwithstanding his manly and eloquent defence, he was executed, in the thirtieth year of his age.

Though cut off, however, before the full maturity of intellectual vigor, he lived long enough to effect some very material improvements in English poetry. The versification of preceding poets was more properly rhythmical than metrical. Although some improvements had been introduced by Chaucer, he left the number of syllables too indefinite, and did not reach the harmony and compression of which this noble poet afterwards exhibited an example.

"Among the numerous poets," says Campbell, "belonging exclusively to Elizabeth's reign, Spenser stands without a class and without a rival. In the other poets of his age we chiefly admire their language, when it seems casually to advance into modern polish and succinctness. But the antiquity of Spenser's style has a peculiar charm. Much of his expression is now become antiquated, though it is beautiful in its antiquity, and, like the moss and ivy on some majestic building, covers the fabric of his language with romantic and venerable associations."

From that age to the Protectorate of Cromwell, inclusively, there rose, in a continued succession of distinguished authors, minds of all orders, writers in poetry, philosophy, history, and theology, who have bequeathed to posterity many pre-

cious treasures of genuine English literature. The translation of the Scriptures, settled by authority, and which can never be materially changed, has secured perpetuity to the best model of the English tongue. Pope indeed said:—

> "Our sons their father's failing language see,
> And such as Chaucer is, shall Dryden *be*."

But this prediction is far less likely to be fulfilled now than it was then, if we consider the slight departure there has been from the style of the great authors of the age of Elizabeth, and of those that followed in the succeeding reigns And if, in some directions, a disposition has been occasionally discoverable to undervalue the simplicity and force of our mother-tongue, even that disposition seems to have declined, if it be not now extinct. The art of the confectioner will never displace our household bread, nor the florid compositions of the musician the simple melodies which touch all hearts.

CHAPTER V.

THE press, though adapted to confer on society distinguished advantages, was not allowed to pour forth its productions in one unimpeded stream. Obstructions to its free exercise arose at an early period in its history. It is said that the monks had a part of their libraries called the *Inferno*, in which were hidden all prohibited books, a free course being allowed to extremely few. In the Council of Trent, the spirit of restriction assumed its most formidable shape, and put forth its most terrific power. The triple-crowned pontiff had in vain launched the thunders of the Vatican, in order that he might strike out of the hands of men the volumes of Wycliffe, Huss, and Luther: a new machinery was therefore to be contrived and set in action.

On Pope Pius IV. being presented with a catalogue of books, the perusal of which, it was said, ought to be forbidden, he not only confirmed their condemnation by a bull, but added rules by which all should in future be judged. His papal successors followed in his footsteps. Literary

inquisitors were appointed at Madrid, Lisbon, Naples, and the Low Countries, to carry the papal restrictions into vigorous effect. The catalogues of prohibited books were called "Indexes," and the inquisitors have been, and are still, known at Rome as "The Congregation of the Index."

Of these indexes there are two kinds: one is a list of condemned books which are never to be opened; the other comprehends those works which are only prohibited till they have undergone a purification. The latter list is accordingly known by the name of "The Index Expurgatorius." As the Caliph Omar directed that all the works in the far-famed library of Alexandria, which contravened in the slightest degree the dictum of Mohammed, should be consigned to the flames, so the Council of Trent placed under a ban any volume, whatever might be its nature, which breathed a hint against the authority of the Romish Church; and this prohibition has been carried out from age to age.

Such a tyrannical policy, however, has failed in its object. Works which to the Romanist party were objects of dislike, had a singular and powerful attraction for those whose religious opinions were of a different character, and a demand for them was in consequence created, in

spite of the interdict. So it has been, and so it will still be, in other matters besides those connected with religion, where a just liberty is restrained or denied.

As Mr. D'Israeli says :* "The results of these indexes were somewhat curious. As they were formed in different countries, the opinions were often opposite to each other. The learned Arias Montanus, who was a chief inquisitor in the Netherlands, and concerned in the Antwerp index, lived to see his own works placed in the Roman index; while the inquisitor of Naples was so displeased with the Spanish index, that he persisted to assert that it had never been printed at Madrid. Men who began by insisting that all the world should not differ from their opinions, ended by not agreeing with themselves. A civil war raged among the index-makers; and if one criminated, the other retaliated. If one discovered ten sentences necessary to be expurgated, another found thirty, and a third inclined to place the whole work in the condemned list. The inquisitors at length became so doubtful of their own opinions, that they sometimes expressed in their license for printing, that 'they tolerated the read-

* "Curiosities of Literature."

ing, after the book had been corrected by themselves, till such time as the work should be considered worthy of some further correction. The expurgatory indexes excited louder complaints than those which simply condemned books, because the purgers and castraters, as they were termed, or, as Milton calls them, 'the executioners of books,' by omitting or interpolating passages, made an author say, or unsay, what the inquisitors chose; and their editions, after the death of the authors, were compared to the erasures or forgeries in records; for the books which an author leaves behind him, with his last corrections, are like his last will and testament, and the public are the legitimate heirs of the author's opinions."

The history of one book is of extraordinary interest. Aonio Paleario was appointed by the Senate of Sienna public teacher of Greek and Latin, and also lecturer on philosophy and the belles-lettres. His true piety imbued his instructions with a spirit very different from that of his colleagues, and this, while it gratified his pupils, provoked the anger of the authorities. In one of his letters, he says, "Cotta asserts that if I am allowed to live, there will not be a vestige of religion left in the city. Why? Because, being

asked one day what was the first ground on which men should rest their salvation? I replied, 'Christ!' Being asked what was the second? I replied, 'Christ!' And being asked what was the third? I still replied, 'Christ.'"

Paleario published in his native language a treatise entitled, "The Benefit of Christ's Death," which gained a vast reputation, and three hundred persons leagued with Cotta to effect his destruction. In order to secure Paleario's condemnation, twelve of them were selected to be his accusers. Arraigned before the Senate of Sienna, he pleaded his own cause with a hallowed and impressive eloquence which led to his acquittal. Being, however, arrested on another charge of heresy, he was condemned to die, and suffered the cruel penalty of death by fire.

Of Paleario's treatise, so great was the popularity, that forty thousand copies are said to have been sold in six years; and it was translated into several other languages. But it was forbidden in the various prohibitory indexes. The spirit displayed in reference to it is thus correctly expressed by Mr. Macaulay: "It was not on moral influence alone that the Catholic Church relied. In Spain and Italy, the civil sword was unsparingly employed in her support. The Inquisition was

armed with new powers, and inspired with a new energy. If Protestantism, or the semblance of Protestantism, showed itself in any quarter, it was instantly met, not by party-teasing persecution, but by persecution of that sort which bows down and crushes all but a very few select spirits. Whoever was suspected of heresy, whatever his rank, his learning, or his reputation, was to purge himself to the satisfaction of a severe and vigilant tribunal, or to die by fire. Heretical books were sought out and destroyed with unsparing rigor. Works which were once in every house were so effectually suppressed, that no copy of them is now to be found in the most extensive libraries. One book in particular, entitled, 'Of the Benefit of the Death of Christ,' had this fate. It was written in Tuscan, was many times reprinted, and was eagerly read in every part of Italy. But the inquisitors detected in it the Lutheran doctrine of faith alone. They proscribed it, and it is now as utterly lost as the second decade of Livy."

Mr. Macaulay's opinion, however, as to the entire destruction of this work, proved not to be strictly correct. Three copies of it in English were discovered, made from a French version, most probably by Arthur Golding, who was long and laboriously employed, in Queen Elizabeth's

reign, in rendering into English the works of several of the foreign reformers, as well as of other writers. That it is a faithful rendering from the original, is apparent from many circumstances.*

The restraint of the press, however, even to persecution and death, does not lie entirely at the door of Romanists: the shame and the guilt are indissolubly associated with others also.

Whitgift complained to Queen Elizabeth of the liberty that was taken by many persons, of publishing their religious opinions: upon which he obtained a memorable decree in the Star Chamber, "That there should be no printing-presses in any private places, nor in any part of the kingdom besides London and the two universities; and these to be allowed by the license of the Archbishop, or the Bishop of London. That if any person willingly printed, sold, or bound any book against the form and meaning of any statute of the realm, or any of the Queen's injunctions, or any letters patent, commissions, or prohibitions,

* The Religious Tract Society of London recently sent forth a new edition of this remarkable work. A translation of the same book has likewise been issued in Italian, with a view to its being again circulated in the native country of its author.

such persons should suffer three months' imprisonment; and that the wardens of the Stationers' Company might search for all such books, and seize them to her Majesty's use."* How rigorously and cruelly this decree was enforced, the records of the times affectingly declare.

The same course was taken in after times. On the 1st of July, 1637, the Star Chamber issued a decree "for reducing the number of master printers, and punishing all others who should follow the trade, and for prohibiting as well the impression of new books without license, and of such as had been licensed formerly without a new one, as the importation of all books in the English tongue, printed abroad, and of all foreign books whatever, till a true catalogue thereof had been presented to the Archbishop of Canterbury, and the Bishop of London, and the books themselves had been received by their chaplains, or other learned men of their appointment, together with the masters and wardens of the Stationers' Company."

Memorable, indeed, are the declarations of Milton on this subject: "He who is made judge to sit upon the birth or death of books, whether

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* Strype's Whitgift.

they may be wafted into this world or not, had need to be a man above the common measure, both studious, learned, and judicious: there may be else no mean mistakes in his censure. If he be of such worth as behoves him, there cannot be a more tedious or unpleasing journey-work, a greater loss of time levied upon his head, than to be made the perpetual reader of unchosen books and pamphlets. There is no book acceptable, unless at certain seasons; but to be enjoined the reading of that at all times, and in a hand scarce legible, whereof three pages would not down at any time, is an imposition which I cannot believe how he that values time and his own studies, or is but of a sensible nostril, should be able to endure.

"What advantage is it to be a man over what it is to be a boy at school, if we have only escaped the ferula to come under the fescue of an *imprimatur?*—if serious and elaborate writings, as if they were no more than the theme of a grammar lad under his pedagogue, must not be uttered without the cursory eyes of a temporizing licenser? When a man writes to the world, he summons up all his reason and deliberation to assist him—he searches, meditates, is industrious, and likely consults and confers with his judicious friends, as

well as any that writ before him: if in this, the most consummate act of his fidelity and ripeness, no years, no industry, no former proof of his abilities, can bring him to that state of maturity, as not to be still mistrusted and suspected, unless he carry all his considerate diligence, all his midnight watchings, and expense of Palladian oil, to the hasty view of an unleisured licenser, perhaps much his younger, perhaps inferior in judgment, perhaps one who never knew the labor of book-writing; and, if he be not repulsed or slighted, must appear in print like a Punic with his guardian, and his censor's hand on the back of his title, to be his bail that he is no idiot or seducer, it cannot be but a dishonor and derogation to the author, to the book, to the privilege and dignity of learning."

Of the incompetency of some who acted as censors, there is ample evidence. The simile of Satan with the rising sun was supposed to contain a treasonable allusion, and nearly occasioned the suppression of "Paradise Lost." Malebranche said, that he could never obtain an approval for his "Research after Truth," because it was unintelligible to his censors: at length Mézeray, the historian, approved of it as a work on geometry. Not a few of these critics were but a little wiser

than the Austrian censor, who found that a volume on the "Destruction of Insects" had a covert allusion to the Jesuits, who, he conceived, were thus malignantly designated. It was, however, perhaps only a joke of one who said to a geometrician, "I cannot permit the publication of your book: you dare to say, that between two given points the shortest line is the straight line. Do you think me such an idiot as not to perceive your allusion? If your work appeared, I should make enemies of all those who find, by crooked ways, an easier admittance into Court than by a straight line."*

The list would be no inconsiderable one, of the works that have suffered serious mutilation. Camden declared that he was not suffered to print all his "Elizabeth," and sent the omitted passages over to De Thou, the French historian, who printed his history faithfully two years afterwards. In like manner, Lord Herbert's History of Henry VIII. has never been given to the world according to the original, which is still in existence. A poem of twenty pages, from the works of Lord Brooke, was cancelled by the order of Archbishop Laud. Sir Matthew Hale ordered that none of

* D'Israeli's "Curiosities of Literature."

his works should be printed after his death, as he apprehended that, in the licensing of them, some things might be struck out or altered, which he had observed, not without some indignation, had been done to those of a learned friend. He therefore preferred bequeathing his uncorrupted MSS. to the Society of Lincoln's Inn, as their only guardians, hoping that they were a treasure worth keeping.

Another passage of Milton's Defence of the Liberty of the Press must not be omitted: "Books are not absolutely dead things, but do contain a progeny of life in them, to be as active as that soul whose progeny they are; nay, they do preserve, as in a vial, the purest efficacy and extraction of that living intellect that bred them. I know they are as lively, and as vigorously productive, as those fabulous dragon's teeth; and being sown up and down, may chance to spring up armed men. And yet, on the other hand, unless wariness be used, as good almost kill a man as kill a good book. Who kills a man, kills a reasonable creature, God's image; but he who destroys a good book, kills reason itself, kills the image of God, as it were, in the eye. Many a man bears a burden to the earth; but a good book is the precious life-blood of a master spirit, em-

balmed and treasured up on purpose to a life beyond life. It is true, no age can restore a life, whereof perhaps there is no great loss; and revolutions of ages do not oft recover the loss of a rejected truth, for the want of which whole nations fare the worse. We should be wary, therefore, what persecution we raise against the living labors of public men—how we spill that seasoned life of man, preserved and stored up in books; since we see a kind of homicide may be thus committed, sometimes a martyrdom, and, if it extend to the whole impression, a kind of massacre, whereof the execution ends not in the slaying of an elemental life, but strikes at the ethereal and fifth essence, the breath of reason itself—slays an immortality rather than a life."

It was not, however, till the reign of William III. that the press obtained its perfect freedom, of which the following is a remarkable illustration. When the Danish ambassador complained to the King that Lord Molesworth had reflected on his master's government, in his account of Denmark, and hinted that if a Dane had so treated the King of England, he would, on complaint, have taken the author's head off—the King naïvely replied, "That I cannot do; but, if you please, I will tell

him what you say, and he shall put it into the next edition of his book."

Even now, on the continent of Europe, there is no liberty of the press. But it is otherwise in Great Britain, and in this highly favored land. The words of Sir James Mackintosh, in his brilliant defence of the exile Peltier for a libel on Napoleon, are still true: "One asylum of free discussion is yet inviolate. There is still one spot in Europe where man can freely exercise his reason on the most important concerns of society, where he can boldly publish his judgments on the acts of the proudest and most powerful tyrants: the press of England is still free. It is guarded by the free constitution of our forefathers. It is guarded by the hearts and arms of Englishmen; and I trust I may venture to say, that if it be to fall, it will fall only under the ruins of the British empire." And as to the United States, it makes one smile to think of muzzling the American press—the thing is impossible.

CHAPTER VI.

ALTHOUGH, as we have just seen, there were for a long period very grievous restrictions on the liberty of the press, yet the time came in which facilities for publication were enjoyed which had no parallel in any former age.

After the accession of James I., the press was for a time almost entirely devoted to the issue of controversial works. A bookseller, named Tomlinson, collected two thousand volumes of pamphlets issued between the years 1640 and 1660. The number of publications included in this collection amounts to thirty thousand. They were bargained for, but not purchased, by Charles II., and were eventually bought by George III, who presented them to the British Museum.

An extraordinary impulse was given to the printing-press by the publication of newspapers; an event in its history at which it becomes us to glance. Newspapers did not originate in England; for about the middle of the sixteenth cen-

tury, when the republic of Venice was engaged in a momentous war with the Turks, the expedient was adopted of recording occasional accounts of its naval and military operations on written sheets. These were deposited at particular places, where they were accessible to any one desirous of learning the news, on the payment of a small coin, called a *gazeta*—a name which was gradually transferred to the paper itself. Thus Blount* defines the word "Gazette" as "a certain Venetian coin, scarce worth one farthing; also a bill of news, or short relation of the general occurrences of the time, printed most commonly at Venice, and thence dispersed every month into most parts of Christendom."

A file of these written Venetian papers, of an early date, and published under the immediate surveillance of the government, is still preserved in one of the libraries of Florence. Although the art of printing had after its discovery been nowhere more speedily brought into use than at Venice, yet the jealousy of the government forbade the issue of a printed newspaper, and the Venetian *Gazeta* continued, in consequence, to be distributed in manuscripts for upwards of a cen-

* Glossographia.

tury after the introduction of the printing-press. When the Venetian newspaper, however, was printed instead of written, all Christendom became indebted to it for political information, as the ships of the republic traversed every known sea, and its maritime power shone forth resplendently in the midst of the nations. Some of these ancient printed newspapers, we have just referred to, may still be seen in good preservation at Venice. Newspapers subsequently appeared in several cities in Italy, but were prohibited in that country by Pope Gregory XIII.

We have alluded to the newspapers of Venice being originally distributed in a manuscript form. Something of a similar kind was also common in England.

The desire of receiving intelligence from the metropolis, which was felt by the wealthier country residents, led to the common establishment of a very curious trade, that of news-correspondents, who, for a subscription of three or four pounds per annum, wrote a letter of news every post-day to their subscribers in the country. A writer of the seventeenth century, describing one of this trade, puts into his mouth the following words, as descriptive of his avocation :—

"This is the outer room, where my clerks sit,
And keep their sides, the register i' the midst:
The examiner, he sits private there, within;
And here I have my several rolls and files
Of news by the alphabet, and all put up
Under their heads."

The news-correspondent, as thus drawn, was undoubtedly the precursor of our newspaper editor.

The "English Mercurie" was long supposed to be the earliest printed newspaper; but Mr. Thomas Watts, of the British Museum,* by a series of ingenious proofs, successfully demonstrated it to be a literary forgery. "The first thing," he says, "that arouses suspicion in the printed number—the first thing that catches the eye—is the form of the type. Instead of being that of two centuries and a half, it is that of about a century back, the 'English fount,' in fact, bearing a strong resemblance to that in Caslon's Specimens of Types, published in 1766. A single glance at the pages, however, is in this case more efficacious than volumes of description could possibly be. Their whole appearance decidedly stamps them as having issued from the press in

* Letter to A. Panizzi, Esq.

the eighteenth, instead of the sixteenth century. There is, moreover, one peculiar characteristic about the printing, sufficient, if the shape of every letter were ancient, to betray the secret of its modern execution. The distinction between the u's and v's, and the i's and j's, entirely unknown to the printers of the sixteenth century, is here maintained throughout in all its rigor. This circumstance alone, if others were wanting, would be decisive against the supposed antiquity of the printed English Mercuries."

The first genuine newspaper is believed to have been "THE WEEKLY NEWES," projected, it appears, by Nathaniel Butler, its author and writer. "No claim," says Mr. F. K. Hunt, "for very great originality or genius can be put in for him. His merit consists in the simple fact that he was the first to print what had long been written—to put into type what he and others had been accustomed to supply in manuscript—the first to give to the news-letters of his time the one characteristic feature which has distinguished newspapers ever since.

"He offered the public a printed sheet of news, to be published at stated and regular intervals. Already hosts of printed papers, headed with the word 'Newes,' had been issued; but they were

mere pamphlets—catchpennys, printed one now and another then, without any connection with each other, and each giving some portion of intelligence thought by its author to be of sufficient interest to secure a sale. The Weekly News was distinguished from them all by the fact of its being published at fixed intervals, usually *a week* between each publication, while each paper was numbered in regular succession, as we have newspapers numbered at the present day.

"The step he took, though great in ultimate consequences, was one very simple and natural, and easily understood. He had been a news-writer, an author of news-letters; one of a class of persons then engaged in London as general correspondents, having offices where they despatched packets of news to persons of consideration in the country, who were rich enough to afford such a luxury. Though printing-presses had been at work in England for a hundred and fifty years, and though the Reformation had allowed them greater freedom than was known where the Roman faith still flourished, the invention of Guttenberg had not been employed for the systematic dissemination of intelligence relative to passing events. Stray pamphlets told now and then how a great flood had devastated

the western counties, how a witch had been burned, or how Gustavus had fought a great battle; but the punctual record of the history of the passing time, week by week, was a thing unattempted till the news-*writer*, Nathaniel Butler, became a news-*printer*."

The appetite for news once created, speedily gained vigor, and, within a few years, "Mercuries," "Corantos," "Gazettes," and "Diurnals," became numerous. A weekly newspaper, entitled "The Certain News of this Present Week," was established in London, in August, 1622, and very shortly after, "The London Weekly Courant," and several other journals, made their appearance. On the breaking out of the civil war in the time of Charles I., there was a large increase of newspapers, as well as of other political writings. A provincial newspaper—the first of its kind—was published in 1639 by Robert Barker, at Newcastle, but it seems to have been of only short continuance.

A paper called the "London Gazette" was published August 22, 1642, but its progress was soon arrested. In the time of the Commonwealth, Marchmont Needham was appointed by Cromwell a public newswriter: at the Restoration he was discharged from his post, and two persons, Giles

Drury and Henry Ruddiman, were appointed his successors. It was their duty to publish two authorized newspapers in each week, under the titles of "Parliamentary Intelligencer," and "Mercurius Publicus." The first newspaper published in England, which might be justly deemed a vehicle of *general information*, was established in 1663 by Roger L'Estrange, who continued the publications just mentioned, under the titles of the Intelligencer and the News, until the close of 1665; when, on the 7th of November in that year, a regular official Gazette was published at Oxford, which has been continued under the name of the London Gazette to the present time. Towards the end of the seventeenth century, there seems to have been a species of publication which combined the properties of the written and printed newspaper. Its nature will be gathered from the announcement which preceded one of them, published by Ichabod Dawks in 1696:—"This letter will be done on good writing-paper, and blank space left, that any gentleman may write his own private business. It does undoubtedly exceed the best of the written news, contains double the quantity, is read with abundant ease and pleasure, and will be useful to improve the younger sort in writing a curious hand." The

type of these publications, we may add, was an imitation in some cases of writing, which will explain the meaning of the last remark.

In the reign of William III. the number of newspapers was increased, but they were seldom published more than once a week. In the reign of the Georges, a new feature was given to them, by their being made the vehicles through which the great parties of the state expressed their opinions. Swift, and Bolingbroke, Addison, and a crowd of anonymous writers, inferior to him in literary talent, but sometimes of high station in the royal councils, appealed to the public through this medium. The first attempt at reporting the parliamentary debates, we may here mention, was made in the year 1735—not in a newspaper, however, but in the Gentleman's Magazine, a work to which we shall have presently occasion to refer.

Literature acquired during the reign of Queen Anne a new character; for instead of being largely dependent on the caprice of private patronage, it cast itself broadly on the support of the people. At this period arose "The Tatler," "The Spectator," and "The Guardian," the first sheaves of the harvest of popular literature which was to follow. These, and other productions of a similar character, issued from time to time under

various names, have since been ranged together in a long series of volumes, under the general name of "The British Essayists." They proved the harbingers of a higher class of periodical miscellany—the Magazine, introduced by Edward Cave, a printer. He formed the design of collecting into a permanent repository the most valuable of the fugitive pieces from the newspapers and other sheets, or rather half-sheets, which appeared during each month. He offered a share of his project to many of the booksellers in London, who rejected it, either on the ground of its absolute absurdity, or as militating against their interests. They did not profit by experience; for the "Essayists," a work of which the magazine formed a natural development, were selling freely. The lowness of their price contributed to this effect, and an ordinary degree of sagacity would, therefore, it might have been expected, have regarded Cave's scheme with hopefulness, particularly as the number of fugitive pieces adapted for collection into one work was at the time very great. About two hundred per month of such pieces were then thrown off from the press in London, and about as many were printed in other parts of the three kingdoms.

Not discouraged by the opposition of his bro-

ther booksellers, Cave, in 1731, produced, at his own risk, "The Gentleman's Magazine," being the first work of that kind printed in England. So great was its success, that in the following year "The London Magazine" was set up as its rival. In 1749, the first English "Review" of any importance, entitled the Monthly Review, was published.

A foreign review, the "*Journal des Sçavans*," had been published in January, 1665. It was of small size, issued weekly, and each number contained from twelve to sixteen pages. The first book reviewed was an edition of Victor Vilensis and Vigelius Tapsensis, African bishops of the fifth century, by Father Chiflet, a Jesuit.

The demand for popular literature now rapidly advanced. Newspapers and magazines alike, increased, and books, issued in numbers, were sold largely by hawkers in the rural districts and small provincial towns. In this way, the principle was first developed of extending the sale of books by coming into the market at regular intervals with fractions of a work, so that the customer of humble grade might, as it were, make a deposit every week in a savings' bank of knowledge. One of the most successful of the books published in this manner was Smollett's "History of Eng-

land," which sold on its first publication to the extent of twenty thousand copies.

Towards the close of the eighteenth century, the taste for essay-writing declined. The popular reviews had also remained uncharacterized by distinguished ability, when, in the year 1802, the Edinburgh Review gave fresh impulse to this species of writing, and proved the precursor of a new era in English literature. The plan of the work just named was suggested by the late Rev. Sydney Smith, at a meeting of literati in Buccleuch-place, Edinburgh, then the spot where Mr., afterwards Lord Jeffrey, its editor, resided.

Since that period, there has been a vast extension of the issue of books. Exclusive of pamphlets, and other tracts, the number of works published in the first fifty-seven years of the last century was 5,280, being only an average of 93 new works in each year. From 1792 to 1802, eleven years, exclusive of reprints and pamphlets, there were 4,096 new works, averaging 372 new books per annum. From 1800 to 1827, excluding, as before the number of new books was 15,-888, showing an annual average of 588 new books; being an increase of 216 per year over the last eleven years of the preceding century.

Some persons have been remarkably prolific in

literary matter. The Spanish poet, Lope de Vega, wrote upwards of 2,000 original pieces, but not more than 300 of them have been printed. He has himself stated that his average amount of work was five sheets a day; and it has been calculated that he composed during his life 133,-225 sheets, and about 21,300,000 verses. He achieved in his day no ordinary fame. Cardinal Barberini followed him through the streets with reverence: the king would even stop to gaze at such a prodigy: the people crowded round him, wherever he appeared: the studious and the learned thronged to Madrid from every part of Spain to see so distinguished a person; and even Italians, in general no extravagant admirers of poetry which did not emanate from their native soil, made pilgrimages for the sole purpose of conversing with Lope de Vega. So associated was the idea of excellence with his name, that a Lope diamond, a Lope day, or a Lope person, became fashionable and familiar modes of expressing good qualities.

In England there have been many instances of rapid and easy composition. Dryden usually wrote with haste, to provide for the wants of the day. Johnson composed in one night matter that

amounted to nearly thirty printed octavo pages; and his sentences, so high-sounding, and apparently the product of great labor, were composed with scarcely any effort. Gibbon, too, sent the first and only copy of his manuscript of the "Decline and Fall of the Roman Empire" to the printer. Many similar instances of rapid composition on the part of authors of eminence, either in verse or prose, might be quoted; but nowhere, perhaps, is this quality more displayed than in that wonder of modern art—a newspaper printing-office, where masses of information of the most diversified character are written, arranged, edited, and printed, with a swiftness and correctness that are truly marvellous. Mr. F. K. Hunt, in his interesting work, "The Fourth Estate," has thus graphically described the multifarious literary processes which have to be gone through in connection with the publication of a daily newspaper:—"By nine o'clock the editor, the sub-editor, the foreign editor, are all busy: the editor with his leaders, the foreign editor with his German and French, and the sub-editor with the mass of multifarious things that now load his table. The law reports being on matters of fact, and usually prepared by barristers, give little

trouble; but, with this exception, scarcely a line comes to the sub-editor which does not require preparation at his hands.

"Meetings reported to please speakers instead of the public; railway and commercial statements, full of long tabular accounts, to be summarized and made readable; letters from indignant 'constant readers,' in which libels lurk in the midst of long statements of wrongs endured, or reforms demanded; reports of police officers, of inquests, of disasters, all written on flimsy paper, and requiring great quickness of eye and mind to decipher at all; papers from all quarters of the kingdom; statements of markets, of shipping, of births, deaths, and all other conceivable and inconceivable things, demand attention and preparation for the printers, who by this time are ready for the six hours' rapid and skilful labor that shall convert this mass of contributions, of all sizes, characters, and qualities, into a shapely morning paper.

"With the help of an assistant or two, the load rapidly diminishes, and by midnight there is a tolerably clear table, preparatory to the arrival of the late railway despatches. These received, a new labor has often to be commenced. Although the troublesome search through fifty country

papers has afforded a great quantity of local news, the late despatches often bring up much more; the Irish and Scotch advices come to hand, and with this addition of home news very often comes a file of papers from America, from the West Indies, from Brazil, from France, Germany, or Hamburgh. An hour or two clears off all these accumulations; and then, the proof-sheets having been attended to, and the place and arrangement of the articles been decided on; the number of leaders and the number of advertisements settled, the columns calculated, and the decision made as to what shall appear, and what stand over—the editorial work of one day is done."

What talent and tact must be required for the selection and arrangement of such a chaos of material! The task, to all but a few of an existing generation, would be absolutely impossible. In the midst of it there is much of literary composition; while "the leaders," almost lost in the mass, though frequently penned on the spur of the occasion, and immediately placed in the printer's hands, are not unfrequently characterized by a vigor of thought, and a force and eloquence of style, which are not to be surpassed by the productions of the most eminent men in literary history, surrounded by circumstances the most

favorable that can be conceived to successful composition.

We have been referring to instances of rapid writing for the press, but it may be added, on the other hand, as a contrast to what we have stated, that to some persons literary composition is a task of prodigious labor. Pietro Bembo, a noble Venetian, secretary to Leo X., was exceedingly fastidious in the revisal of whatever he composed. He had forty portfolios through which each sheet successively passed, and no one was removed, in any instance, without receiving a fresh perusal and further correction. Referring to more modern periods, every line of Sismondi's Italian Republics was written three times, and so were almost all the other historical works of this writer. He corrected his proofs five or six times, and generally twice read aloud all that he composed. Gibbon's Memoir of his own life is only a fragment, and yet, contrary to his practice when composing his history, he wrote it six times over. Buffon did not suffer his "*Epoques de la Nature*" to appear in print till they had been written eighteen times. Pope published nothing until it had been a year or two before him, and even then his proofs were full of alterations; so much so, that on one occasion his publisher

thought it better to have the whole recomposed by the printer, than for the latter to make the necessary corrections. Goldsmith spent seven years over his poem of the Deserted Village. Robertson wrote the sentences of his Histories on small slips of paper; and after polishing them to his mind, entered them in a manuscript book, which afterwards had to undergo considerable revision. Burke, Akenside, Gray, and Thomson, also, were most elaborate and indefatigable correctors. Petrarch made forty-four alterations in a single verse; and Mr. Macaulay states that he has in his possession a very fine stanza of Ariosto, which the poet had altered a hundred times.

A singular instance of difficulty in composition, with the mention of which we shall conclude these illustrations, is to be found in the case of that admirable writer, John Foster, who thus expresses himself on the subject to a friend:* "I am sometimes very much disposed to murmur that the little I *can* do towards any sort of usefulness being entirely in the intellectual way, the doing it should be so slow, and irksome, and painful, and, even physically, injurious an operation. Some of the workmen in the thinking-shop can do about their best with a great degree

* Letters.

of facility and despatch—can bring thoughts and put them into sentences about twenty times as fast as I ever could. In my case, old *practice* has not given the smallest advantage in point of facility. Rather, I think, of the two, it has left the business still more slow and laborious than even formerly; so that my aversion to the employment has continually increased. It is the literal truth, that I never, in the course of the whole year, take the pen for a paragraph or a letter, but as an act of force on myself. When I have a thing of this kind to do, I linger hours and hours often before I can resolutely set about it; and days and weeks, if it is some task more than ordinary. About finding proper words and putting them in proper places, I have more difficulty than it could have been supposed possible any one should have, after having had to work among them so long; but the great difficulty is the downright scarcity of matter—plainly, the difficulty of finding any thing to say. My inventive faculties are exactly like the powers of a snail; and in addition, my memory is an inconceivably miserable one."

CHAPTER VII.

COULD we, by an effort of imagination, obtain a vivid picture of the printing-press of Caxton, or of Wynken de Worde, and then survey one of the extensive and well-provided typographical establishments of our own times, we should be sensible of a contrast probably not to be surpassed in its greatness in the whole history of art. We propose now to describe some of the elements of which that contrast would be formed, as well as the circumstances in which they arose.

In the early history of typography, printers made the letters they used, but their production by the letter-founders has long been a separate branch of business. This process requires no little skill and management. In the first instance, there is the cutting of a punch, resembling the letter to be formed, except that it is in reverse. The punch being of hardened steel, and having this letter on its point, is then struck into a small piece of copper, which is called the *matrix*, or form of the letter to be cast. The matrix is now fixed

in a curiously contrived instrument, termed the *mould*. The founder then holding the mould in his left hand, with his right pours the liquid metal into the hole of the cube, forcing it down to the matrix by jerking the mould upwards higher than his head: he then lowers it as suddenly, quickly opens the mould, shakes out the type, and repeats the process. In this way not only every letter, but every figure, hyphen, comma, or other mark, must have its punch and matrix, as well as its separate casting. A single workman will cast from four hundred to five hundred types per hour.

A machine has been invented and patented for the manufacture of printing types without fusing the metal and pouring it into moulds, the operation being effected by the pressure of a sharp die upon copper. By the application of a small steam-engine, it is estimated that the machine can produce sixty types per minute, or thirty-six thousand in ten hours. The strength of copper over ordinary type metal, is stated to be in the proportion of one hundred to one, and the capacity of its endurance may be judged from the fact that, when employed to print Government stamps, one hundred and twenty-five millions of

impressions have been taken from a single plate which had a raised copper surface.

As soon as, by the ordinary process, there is a heap of types, a boy removes them, and breaks off the superfluous piece at the end of each, when another rubs its sides on a stone to render them smooth. The types are afterwards set up in long lines on a frame, where they are polished and prepared for use. The face, or printing part of the type, is not touched after it leaves the matrix, that alone giving it all the distinctness and sharpness of which it is capable. All the types of one class are precisely the same in height, while each letter or point has on its body one or more nicks, all of which make an equal range when the type is set up, and all are equally grooved at the bottom, that they may stand up steadily. Types vary considerably in size, from the smallest, called *diamond*, used in pocket-Bibles and Prayer-books, to the huge letters which meet the eye on some posting-bill, exhibited on a van, or affixed to a wall.* When a great many of each of the letters of the alphabet, together with points, figures, and other necessary marks and

* The very large letters, used for printing placards to be posted on walls, etc., are commonly made of wood.

signs, all cast in certain proportions to each other, are to be designated by one term, they are called *a fount* of types.

At the commencement of the eighteenth century, the native ability of English letter-founders was so little prized by the printers of the metropolis, that they were in the habit of importing founts from Holland, where superior types were then manufactured. Thus the works of English literature, which so greatly distinguished the reign of Queen Anne, were originally presented to the public through the medium of Dutch types. How long England might have remained dependent in this respect on the Continent, had it not been for the energy of one individual, it is impossible to calculate.

This person was William Caslon, who was born in that part of the town of Hales Owen which is situated in Shropshire. He served a regular apprenticeship to an engraver on gunlocks and barrels, and after the expiration of his term, followed his business in Vine street, near the Minories, London. In every branch of it his ability was conspicuous, but his early reputation arose chiefly from his genius and skill in inventing and engraving ornamental devices on the barrels of fire-arms. Occasionally, however, he

was employed in making tools for book-binders, and for chasers of silver plate.

While thus engaged, some of his book-binding punches were noticed for their neatness and accuracy by Mr. Watts, an eminent printer, who, by engaging to support him and to introduce him to the leading typographers of the day, induced him to undertake the occupation by which he afterwards acquired so much distinction.

Caslon, who had not before seen any part of the business, on being taken to a foundry, was asked by a friend if he thought he could cut punches for types. He requested a single day to consider the matter, and at the expiration of that time replied, that he had no doubt he could. Aided by the liberality of his friends, he applied himself to the task with assiduity and zeal, which were alike required by existing obstacles. Not only had he to excel his competitors in his own peculiar branch of engraving the punches — which to him was probably by no means arduous— but to raise an establishment, and cause his plans to be executed by unpracticed workmen. He had also to acquire for himself a knowledge of the practical and mechanical branches of the art, for which the most minute and patient attention is indispensably requisite.

But his wishes were realized, and the expectations of his patrons and friends were exceeded, by the decided superiority he gained over all rivals, whether domestic or foreign. Not only did the importation of type cease, but so highly were Caslon's founts esteemed, as to be frequently exported to the Continent. For sixty years, that is, from 1720 to 1780, few works were printed with the types of any other foundry, and the editions of that interval are of remarkable excellence.

One of the chief improvements of the style of typography has been effected by the dismissal of abbreviations and connected letters from the founts. Formerly, the word *the* was indicated by the letter *y*, with a small *e* above it; *&* was used for the conjunction *and;* and many other unseemly abbreviations were employed. Connected letters were also common: *c* and *t* were joined by a curve from the top of one to the other; and when two *ss* came together, a long *ſ* was used.

The compositor is said to "work at case;" for all the types are sorted in cases, or shallow and divided boxes: the *lower* case, or the one nearest him, having all the small letters, points, and spaces, to place between the words; and

the *upper* case, containing all the capitals, accented letters, figures, and characters used as references to notes. Each letter has a larger or smaller box appropriated to it, according as it is seldom or frequently required, while the letters most needed occupy the position most convenient for the compositor.

"In the English language, the letter *e* inhabits the largest box; *a*, *c*, *d*, *h*, *i*, *m*, *n*, *o*, *r*, *s*, *t*, *u*, live in the next-sized apartments; *b*, *f*, *g*, *l*, *p*, *v*, *w* *y*, dwell in what may be termed the bedrooms; while *j*, *k*, *q*, *x*, *z*, *æ*, and *œ*, double letters, etc., are more humbly lodged, in the cupboards, garrets, and cellars. And the reason of this arrangement is, that the letter *e* being visited by the compositor sixty times as often as *z*, (for his hand spends an hour in the former box for every minute in the latter,) it is evidently advisable that the letters oftenest required should be the nearest. Latin and French books devour more of *c*, *i*, *l*, *m*, *p*, *q*, *s*, *u*, and *v*, than English ones, and for these languages the 'cases' must, therefore, be arranged accordingly." The "cases" are placed upon "frames," in shape and height similar to the music-stands in an orchestra; each of which is so constructed as to hold two pairs of cases, the one pair containing

the Roman, and the other the Italic letters of the same fount. In one of our large printing-offices there are as many as sixty of these frames in a single room.

The various processes in the art of printing were some years since graphically portrayed in an article in the "Quarterly Review," and in "Days at the Factories," from which some of the following interesting details have been abridged:

"It is impossible," says the writer of the article referred to, "to contemplate a team of sixty literary laborers steadily working together in one room, without immediately acknowledging the important service they are rendering to the civilized world, and the respect which, therefore, is due to them from society. The minutiæ of their art it might be deemed tedious to detail; yet with so many operators in view, it is not difficult, even for an inexperienced visitor, to distinguish the different degrees of perfection at which they have individually arrived.

"Among compositors, as in all other professions, the race is not always gained by him who is apparently the swiftest. Steadiness, coolness, and attention, are more valuable qualifications than eagerness and haste; and, accordingly, those compositors who at first sight appear to be doing

the most, are often, after all, less serviceable to themselves, and consequently to their employers, than those who, with less display, follow the old adage of 'slow and sure.'

"On the attitude of a compositor his work principally depends. The operation being performed by the eyes, fingers, and arms, which, with considerable velocity, are moved almost in every direction, the rest of the body should be kept as tranquil as possible. However zealous, therefore, a workman may be, if his shoulders and hips are seen to be moved by every little letter he lifts, fatigue, exhaustion, and errors are the result; whereas, if the arms alone appear in motion, the work is more easily, and consequently more successfully executed.

"Before a compositor can proceed with his '*copy*,' his first business must evidently be to fill his 'cases.' The usual way of filling cases with letters is by distributing the type pages of books which have been printed off. The distributing of the letters from the type pages into the square dens to which they respectively belong, is performed with astonishing celerity. If the type were jumbled, or, as it is technically termed, 'in pie,' the time requisite for recognizing the tiny countenance of each letter would be

enormous; but the compositor, being enabled to grasp and read one or two sentences at a time, without again looking at the letters, drops them one by one, here, there, and everywhere, according to their destination. It is calculated that a good compositor can distribute four thousand letters per hour, which is about five times as many as he can compose; just as, in common life, all men can spend money at least twenty times as readily as they can earn it.

"As soon as the workman has filled his cases, his next Sisyphus labor is by composition to exhaust them. Glancing occasionally at the copy before him, he consecutively picks up with a zig-zag movement, and with almost the velocity of lightning, the letters he requires." Standing in front of the cases which contain the Roman letters, he holds in his left hand what is called the *composing-stick*, which is commonly made of iron or brass, having a movable side, which may be adapted to any width of line, by means of a screw. The copy is placed upon the least used part of the upper case. The compositor puts the letters of every word, with all the required points and spaces between them, into his stick, securing each addition by the thumb of his left hand, from left to right along the line. "His

right hand goes mechanically to the box which he requires; but his eye is ready to accompany its movements." In each letter, as already noticed, there is a nick, or nicks, which indicate the lower part of the letter, and which he must always place outwards in his composing-stick. "If the compositor were to pick up the letter at random, he would most probably have to turn it in his hand, and as it is important to save every unnecessary movement, his eye directs him to some one of the heap which lies in the right position, both as regards the face being upwards, and the nick being outwards." When the line is completed, much care is required in spacing, so that the type may not be too crowded, nor have too many chasms, and that the lines may be properly connected or terminated, as each one must be "justified," as the phrase is, or made to correspond with those previously set. A thin slip of brass, called a *setting-rule*, is placed in the composing-stick at the outset, and pulled out and placed on the front of a line when completed, greatly facilitating the process of composition. When there are as many lines in the composing-stick as it will conveniently hold, the compositor lifts them out, as if they were a mass of solid metal, with the fingers of both hands, and places

them in what is called *the galley*—a flat board or piece of zinc or brass, having a ledge at the head and on one or both sides.

"The facility with which some compositors can lift about what is called a *handful* of movable type, without deranging a single letter, is very remarkable. Such skill is only attained by practice; and one of the severest mortifications with which a learner has to contend, is to toil for an hour or two in picking up several thousand letters, and then see the fabric destroyed by his own clumsiness," leading him to mourn over his "pie," as the heap of jumbled type is technically designated.

The galley is filled by the contents of successive sticks, and in the instance of newspapers and most other periodical works, a proof is taken before the type is made up into pages. In books, however, when there are sufficient lines to form a page, and having first placed the head-line, containing the title of the book, or the contents of a portion of it, with the proper figure in the corner, the compositor binds the types tightly round with a cord, and places them under his frame. The requisite number of pages to form a sheet being completed, they are arranged by the compositor upon a bench, or *imposing-stone*, and

each is surrounded with pieces of wood, or *furniture*, so as to provide a proper margin for each page. The whole are then secured in an iron frame, or *chase*, by means of slips of wood and wedges. This process is called *imposing*.

Whether the proof is taken before or after the type is made up into pages, the process of correction immediately follows. "As the compositor receives nothing for curing his own mistakes, they form the self-correcting punishment of his own offence. The operation is the most disagreeable, and, by pressure on the chest incurred in leaning over the form, it is also the most unhealthy part of his occupation. The compositor's own errors are scarcely put to rights before a much greater difficulty arrives, namely, the *author's* corrections.

"Few men dare to print their sentiments as they write them. Not only must the framework of their composition be altered, but a series of minute posthumous additions and subtractions are ordered, which it is almost impossible to effect; indeed, it not unfrequently happens that it would be a shorter operation for the compositor to set up the types afresh, than to disturb his work piecemeal, by the quantity of codicils and

alterations which a vain, vacillating, crotchety writer has required.

"In a printing establishment, 'the reader' is almost the only individual whose occupation is sedentary; indeed, the galley-slave can scarcely be more closely bound to his oar than is a reader to his stool. On entering his cell, his very attitude is a striking and most graphic picture of earnest attention. It is evident, from his outline, that the whole power of his mind is concentrated in a focus upon the page before him; and as in midnight the lamps of the mail, which illuminate a small portion of the road, seem to increase the pitchy darkness which in every other direction prevails, so does the undivided attention of a reader to his subject evidently abstract his thoughts from all other considerations. An urchin stands by, reading to *the reader* from *the copy*—furnishing him, in fact, with an additional pair of eyes—and the shortest way to attract his immediate notice is to stop his boy; for no sooner does the stream of the child's voice cease to flow, than the machinery of the man's mind ceases to work—something has evidently gone wrong!—he accordingly at once raises his weary head, and a slight sigh, with one passage of the hand across his brow, is generally sufficient to enable him to

receive the intruder with mildness and attention.

"In a large printing establishment, the rea; interest of which is to increase the healthy appetite of the public by supplying it with wholesome food of the best possible description, it is found to be absolutely necessary that 'the readers' should be competent to correct, not only the press, but the author. It is requisite not only that they should possess a microscopic eye, capable of detecting the minutest errors, but be also enlightened judges of the purity of their own language. The general style of the author cannot, of course, be interfered with; but tiresome repetitions, incorrect assertions, intoxicated hyperbole, faults in grammar, and, above all, in punctuation, it is the reader's especial duty to point out. It is, therefore, evidently necessary that he be complete master of his own tongue. It is also almost essential that he should have been brought up a compositor, in order that he may be acquainted with the mechanical department of that business." The corrections having been attended to by the compositor, a proof is again taken, and, after final revision, the sheet is ready for the press. The form having been "gauged" and duly adjusted by the compositor, it goes to

the pressmen, who are, strictly speaking, the printers, as they take impressions from it on the paper.

Until a very recent period, the presses commonly used in this country differed but little in their form and materials from those first known in Europe, and improved by Blaew. They consisted of two upright cheeks of wood, with stout cross-pieces, in which worked a common iron screw. At the lower part of the screw was suspended a square smooth-faced table of hard wood, occasionally covered with iron, called the *platten*. The *chase*, containing the type, was placed on a level stone, fixed in a wooden bed or carriage, and made to slide backwards and forwards on a sort of railway under the platten. The type being inked by means of *inking-balls*, (made of sheep's pelt,) and a sheet of paper placed upon it, the form was passed immediately under the platten, and this being pressed down by a handle acting on the screw, the impression was taken on the paper. Such was the old-fashioned printing-press, which may still occasionally be seen, in places where the roughest and commonest printing is executed.

The press invented by the late earl Stanhope gained an important point, from its being capable

of all the force of the ordinary machine, with perhaps a tenth of the labor. This result was the reward of many tedious experiments, in which his lordship was aided by Mr. Walker, an ingenious mechanician. The immense advantage given by means of it, not only to the pressman, but also to the public, in consequence of the improvement in the work produced, led to the application to the old presses of Lord Stanhope's compound leverage, by means of which the power of the screw was prodigiously increased. It was, however, soon found that the wooden press was not calculated to sustain the operation of this compound power, especially when applied, as it was in several instances, without any accurate calculation of its probable effects. It caused the framework of the altered presses constantly to give way, and rendered repeated repairs necessary. These circumstances, added to the obvious superiority of the new machines, led to the prompt and general substitution of iron presses for those of wood.

The *ink* to be used in good printing has been the subject of much thought and care. The lamp-black of commerce, coarse and impure as it is, was used as the principal ingredient in it for a period of nearly two hundred years; and it was

not until the days of the celebrated printer Baskerville that attention was turned to the improvement of this article. He discovered a superior kind of black for the purpose required, and to his success may be chiefly attributed the superiority of his printing. Some of his editions of the Latin classics and English poets were distinguished by great beauty of typography.

The discovery of Baskerville, however, lay dormant from the time of his death till 1790, when, through Mr. Martin of Birmingham, his apprentice, and afterwards his foreman, a considerable quantity of his fine black, which had been collected for a length of time from glass-pinchers' and solderers' lamps, was bought by him at an almost unlimited price, and was sold to Mr. Bulmer for his experiments in fine printing. As, however, difficulties arose in the way of obtaining a regular supply of this substance, Mr. Bulmer manufactured an ink for himself, and produced with it many works of most exquisite typography. Mr. Martin was one of his most successful competitors, making his own black, which he did for a considerable time, from fine lamp oil, the smoke being collected in a variety of glazed earthen vessels made for the purpose, connected together, and communicating at last

with one common receiver. The slowness of this process, however, led him afterwards to adopt other means.

It was while engaged in his typographical labors that earl Stanhope entertained the idea of supplying the ink for the printing-press by means of a revolving cylinder, instead of by the old process of stamping balls. Aiming to realize his object, he spared no expense to find a substance adapted to cover the rollers which he meant to employ. He had the skins of every animal which he thought likely to answer the purpose, dressed by every possible process; and he tried also a variety of substances, such as cloth and silk, of various fabrics, but without success. The first impediment was the seam which it was necessary to make down the whole length of the roller; and there was next the impossibility of keeping any skin or substance then known, always so soft and pliable as to receive the ink with an even coat, and communicate the same to the form with the requisite regularity. Sanguine, however, as to the possibility of securing the object desired, all the presses of his lordship's early construction had, at each end of the table, a raised flanch, the height of the type, for the purpose of applying inking rollers; but all his

schemes to perfect such rollers were absolutely baffled.

The idea of the revolving cylinder, however, did not, it appears, originate with his lordship. Papillon, in his work on engraving, gives detailed particulars, illustrated by engravings, of rollers for inking, and Mr. Nicholson also hinted at a similar process. Lord Stanhope's labors to secure the result are, however, entitled to respectful remembrance, as having been intelligent, painstaking, and persevering. The difficulties which his inventive and indefatigable powers could not surmount, were accidentally removed by observing a process in the Staffordshire potteries, in which the workmen use what are there called dabbers. The very substance which had been so ardently sought for was found in these dabbers, composed of glue and treacle: it possessed every requisite to hold and distribute the ink, imparting it equally over the form, and at the same time being easily kept clean, soft, and pliable. An ingenious printer, Mr. Forster, then employed at the printing-office of Mr. Hamilton, bookseller, at Weybridge, was the first who applied the discovery to letter-press printing, by spreading the matter in a melted state on coarse canvass, and making balls, in all other respects, in the usual manner.

The modern invention of *stereotype* differs from ordinary printing mainly in this, that the letters, instead of being run singly in matrices of copper, are cast in plates comprising entire pages, from plaster of Paris moulds. The Luchtmans of Leyden appear to have printed Bibles from plates in which the types were cemented together in pages, so far back as the year 1711. But this plan is very different from that of stereotyping, which was practiced by Mr. Ged, of Edinburgh, in 1725, and by Mr. Fenner and Mr. James, of London, who cast plates for Bibles and Prayer-books in the University of Cambridge, about four years after the last-named date.

The plaster of Paris mould, forming a perfect fac-simile of the page intended to be printed, and surrounded with a proper raised margin, is lowered into a vessel containing type metal* in a molten

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* The *pan* used in casting these pages is 14 inches by 22 inches in size—pans are not generally so large. Until within a year or two the mould was baked before it was put into the pan, as it was feared the ebullition occasioned by the dampness of the plaster might cause the mould to break, but the fear was groundless. Moulds are now immersed in the metal in 20 minutes after they are formed. In 20 minutes more the plates are cast. The metal is composed as follows: to 100 lbs. of lead,

state, and which, filling every cavity, forms, when the mould has been removed and become cool, a solid page of letters. This being dressed on the back until there only remains a plate sufficiently thick to keep the whole together, is attached either to a wooden slab or a composition body, about five-eighths of an inch thick; and in this state the pages are ready for printing.

Somewhat akin to stereotyping was the invention of *logography*. The first number of "The Times, or Daily Universal Register," printed logographically, is dated January, 1788, and its price is marked threepence. Its imprint is interesting, when viewed in connection with the rise of the journal to its present commanding position: "Printed for J. Walter, at the Logographic Press, Printing House Square, near Apothecaries Hall, Blackfriars, where Advertisements, Essays, Letters, and Articles of Intelligence, will be taken in. Also at Mr. Metteneus's, confectioner, Charing Cross; Mr. Whiteeaves's, watchmaker, No. 30, opposite St. Dunstan's Church, Fleet Street; Mr. Axtell's, No. 1, Finch Lane, Cornhill; at Mr. Bushby's, No. 1 Catherine Street, Strand; Mr.

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add from 16 to 20 lbs. of antimony, to give it hardness, and 5 lbs. of tin, to make it tough.—[*Editor.*

Rose's, silk dyer, Spring Gardens; and Mr. Grives's, stationer, No. 103, corner of Fountain Court, Strand."

The phrase, "printed logographically," is, however, one that asks for explanation. Mr. Walter, the proprietor, had obtained a patent for casting in metal whole words, instead of single letters, which were placed side by side, in the manner of type, or interspersed with it on the page. It was expected that, by this means, orthographical errors would be much fewer than in ordinary printing, and that, as less time and labor would be required, the process of typography would be much cheaper. One joke of the time was, that orders to the founder would be as follows:— "Send me a hundredweight, made up in several pounds of heat, cold, wet, dry, murder, fire, dreadful robbery, atrocious outrage, fearful calamity, and alarming explosion;" while another hundred would be made up of "honorable gentlemen, gracious majesty, loud cheers, hisses, and groans, and similar combinations." But, despite of gibes, and taunts, and difficulties, Walter advanced, and on the 1st of January, 1785, he issued the Daily Advertiser, printed in the new manner, having four pages, and a halfpenny stamp: this paper was sold for twopence halfpenny. The new pro-

cess, however, was not found to meet with the success which its patentee had expected for it.

The press is greatly indebted to Mr. William Nicholson, the editor of the journal that bore his name, for various improvements which he made in it, and for which he obtained a patent in the year 1790. Among these was the substitution of two cylinders, or of one cylinder and a plane, for producing the impression, instead of the two plain surfaces of the ordinary or Stanhope press; and also, the use of cylinders covered with an adhesive and elastic composition, for applying the ink to the surface of the form of types, which in the old process was laid on with large balls or dabbers. Some of the means devised by Mr. Nicholson were essentially defective, and other parts of his invention were but very imperfectly carried into effect; yet an examination of his specification will show that many subsequent attempts at machine-printing embody several of the principles which were primarily adopted by that gentleman.

The printing-machines devised by mechanicians, too numerous to name, all possess one and the same general principle, employed in a variety of ways. The ink, by an arrangement of rollers, being applied to the face of the types, the latter

are drawn under a cylinder, on which the sheet being laid, an impression is taken off on one side. The sheet is then conveyed to a second cylinder, by the rotation of which it is carried on to the second form, and the other side is printed. All the hand labor in this process is performed by boys or girls, one of whom lays the paper on the first cylinder, while the other receives it from the second cylinder, and lays the heap even.

Printing by steam machinery was first executed in England at the "Times" office, in 1814. In the "Times" of the 29th of November, in that year, the following announcement appears:—

"Our journal of this day presents to the public the practical result of the greatest improvement connected with printing, since the discovery of the art itself. The reader of this paragraph now holds in his hand one of the many thousand impressions of the 'Times' newspaper, which were taken off last night by a mechanical apparatus. A system of machinery, almost organic, has been devised and arranged, which, while it relieves the human frame of its most laborious efforts in printing, far exceeds all human powers in rapidity and despatch.

"That the magnitude of the invention may be justly appreciated by its effects, we shall inform

the public, that, after the letters are placed by the compositors, and inclosed in what is called the form, little more remains for man to do, than to attend upon and watch this unconscious agent in its operations. The machine is then supplied with paper—itself places the form, inks it, adjusts the paper to the form newly inked, stamps the sheet, and gives it forth to the hands of the attendant, at the same time withdrawing the form for a fresh coat of ink, which itself again distributes, to meet the ensuing sheet advancing for impression; and the whole of these complicated acts is performed with such a velocity and simultaneousness of movement, that no less than one thousand one hundred sheets are impressed in one hour.

"That the completion of an invention of this kind, not the effect of chance, but the result of mechanical combinations, methodically arranged in the mind of the artist, should be attended with many obstructions, and much delay, may be readily admitted. Our share in the event has, indeed, only been the application of the discovery, under an agreement with the patentees, to our own particular business; yet few can conceive, even with this limited interest, the various

disappointments and deep anxiety to which we have, for a long course of time, been subjected."

In the "Times" of February 14, 1828, appeared the following paragraph: "It is now nearly fourteen years since the 'Times' first issued from our office printed by steam and a mechanical apparatus. At that time we spoke, as we thought, with becoming praise of the perseverance and ingenuity of the inventor, Mr. König, and with sufficient modesty, we trust, of our own firmness and resolution in overcoming opposing difficulties, and even dangers. This surprising machine has since received certain improvements from the hand of its original inventor; but we have now to present our readers and the public an account of a vast and most beneficial change that has taken place. The first machine printed but one thousand one hundred sheets per hour; the reader now holds in his hand an impression which a mere machine has yielded at the rate of *four thousand an hour!* Such ease, rapidity, and accuracy united, could hardly ever before be ascribed to any fabric constructed by the hand of man. Let but the reader contemplate, if he can, what must be the rapidity of these motions, which throw off

four thousand printed sheets in every hour, or nearly seventy in a minute!"

But improvement in respect of speed in printing had not yet reached its acmé. In 1849, a still more remarkable invention was introduced at the "Times" office, the credit of which was due to Mr. Applegath. The types, instead of being laid on a table, traversing a sort of railroad—a correct description of the old process—were built up, as it were, on the face of a drum of cast iron. Eight printing cylinders were arranged round this drum, and, instead of the four impressions taken by the old machine in its double journey, eight sheets were printed in every revolution of the cylinder. Eight men, on a raised gallery, were employed to feed the machine, by carefully pushing successive sheets into its eight mouths, each man doing this at the rate of one sheet in four seconds. Directly under these eight men were a similar number on the ground, employed in taking off and piling the printed sheets thrown out by the machine. So astonishing is the velocity of this press, that the eye vainly attempts to follow the numerous sheets of paper in their rapid motion. Ten thousand copies an hour can be thrown off by means of it, and, if necessary, twelve thousand. Indeed, it is said that a sufficiently

large cylinder, with corresponding apparatus, could as easily produce one hundred thousand as ten thousand copies an hour. A calculation made by "*La Patrie*," a French newspaper, shows how marvellously human labor is outrivalled by these mechanical arrangements. The paper, "*La Patrie*," which is much smaller than the "Times," contains about 4,230 lines; 8,000 copies make 34,560,000 lines. A clerk could write about three lines in a minute; therefore it would require 11,520,000 minutes, or 192,000 hours, for a single clerk to supply 8,000 copies of "*La Patrie*;" in other words, it would require 192,000 men to supply, by copying, the same amount of paper which the cylinder printing-press supplies in one hour.

Few things can be more impressive to the mind than to witness the steam printing-press in active operation. "The visitor," says a writer already quoted, "hears a deep rumbling sound, which he is at a loss to understand, until a door before him being opened, he is suddenly introduced to enormous steam-presses. The simultaneous revolution of so much complicated machinery, crowded together in a comparatively small compass, coupled with a moment's reflection as to the purpose for which it is in motion, is astounding to the mind

and as broad leather straps are rapidly revolving in all directions, the stranger pauses for a moment, to consider whether or not he may get entangled in the process, and against his inclination, as authors generally say in their prefaces—'go to press.'"

A new motive-power in lieu of steam, has, however, lately been applied to the printing-press, although in its present shape it appears to be rather an ingenious and novel experiment than a fully tried invention. Mr. Foreman, a printer in the United States, has patented a printing-press, which is moved and regulated by galvanic power. The paper is worked upon a reel, and is continuous, like a telegraphic coil, passing over the type in the form of a cylinder. When one side of it is worked, the paper is reversed, and the other side printed, the sheets being clipped apart as they come from the press by an ingenious contrivance. It is said that there is hardly any limit to the speed at which this press will work, while its exactness is stated to be beyond any thing known in this line of machinery.

Recent improvements in the powers of the printing-press have been happily aided by a new process for the manufacture of paper, the honor of which is due to persons not yet named. Some

very interesting details of Fourdrinier's machinery for making paper of endless length, were given during a debate in the British House of Commons, on April 25, 1839, on the presentation of a petition from this ingenious manufacturer. Among them were the following: That one thousand or a still larger number of yards of paper could be continuously made by it—that, though a patent was obtained, the word "machine" being written instead of "machines," the invention was pirated, and the means of the patentees were exhausted in litigation before they could establish their rights; that they had become bankrupts, and that the invention, on which they had spent £40,000, was entirely lost to them. Hence arose their appeal to Parliament, for some compensation for the loss they had suffered from the state of the patent law.

In support of their plea, the testimony of competent witnesses was adduced, and among them that of Mr. Lawson, the printer of the "Times." He characterized the invention as one of the most splendid discoveries of the age. He stated that the conductors of the metropolitan newspapers could never have presented to the world such an immense mass of news and advertisements as was now contained in them, had not this invention

enabled them to make use of any size required. It was shown also that the increase of the revenue was not less by means of it than £500,000 a year. In May, 1840, the Parliament voted to Messrs Fourdrinier the sum of £7,000.

Our description of the process of printing has been confined chiefly to that department of the art which has reference to the preparation of books. Did it seem necessary, however, steel plate and copper-plate printing might be described, together with the lithographic process, which so much aids the man of business in the production of mercantile circulars and drawn plans. Many curiosities of printing might also be detailed—as the process of printing for the blind, the mode in which some species of the electro-telegraph print their messages, and anastatic printing, by which fac-similes of drawings are produced. It seems well, however, that we should confine ourselves to those processes which are more immediately connected with the printing of books.

The Great Exhibition of 1851, amidst its other marvels, presented many objects illustrative of the perfection to which the art of printing had been brought in our own and other countries. The Catalogue of the Exhibition was itself a

wonderful proof of the rapidity with which large masses of printed matter can, by the aids of machinery and division of labor, be thrown off in an incredibly short space of time. The Exhibition, the reader need hardly be reminded, opened on the 1st of May, yet it was not till midnight of the 30th of April that the Catalogue—a thick and closely printed volume—was ready to go to press. By the next morning, however, a bound copy of it was presented to her Majesty, while in marvellously brief space the work was ready for general circulation. Twelve trades were necessary for the production of this Catalogue, namely, type-founders, printers' joiners, iron-founders, paper-makers, wholesale stationers, letter-press printers, printing-ink-makers, composition roller-makers, engravers on wood, lithographic-printers, hot-pressers, and book-binders. Thirty-seven tons of new type were employed, of which amount twelve tons were manufactured in the short space of six weeks. Twenty-seven thousand reams of paper were used, the amount of duty on which, at $1\frac{1}{2}d.$ per pound, amounted to £3,923; while the ink required for the small catalogue alone amounted to nearly four thousand pounds.

In the Exhibition itself, among the various

objects connected with the printing-press, there was noticeable a mammoth sheet of paper, twenty-five hundred yards in length, and double the breadth formerly used in the trade. Still more curious were gutta-percha stereotypes, and impressions of the same printed on paper in ordinary printing ink. Nor were these exhibited as mere curious toys, but as illustrations of a process well adapted for business purposes. The matrix or mould of the stereotype is taken by the pressure of a block of type upon gutta-percha while in a hot and soft state. The specimens of printing and engraving furnished in this way were as sharp as if taken by metal, while the flexible nature of the substance adapted it for being curved with special ease round a printing cylinder. Strange also as it may appear, gutta-percha types were stated to be very durable.

Much interest was excited in the Exhibition by the working of Mr. Applegath's machinery for printing the "Illustrated London News." As this process has, however, already been described by us, in connection with the "Times" office, a further reference to it here is unnecessary.

Many beautiful specimens of English printing were exhibited, and much curious illustration was

afforded, likewise, of the advanced state to which the art of printing had been brought in foreign countries. Specimens of typography from the imperial printing establishment of Vienna—which were to be seen in the Austrian department—attracted particular notice. According to the calculations furnished, 500,000 sheets, or 1,000 reams of paper per day, are required for the consumption of this establishment. Among the objects which it sent to the Exhibition was a collection of 11,000 steel punches, including one hundred and four different alphabets, from the hieroglyphic downwards. There was also a copy of a work produced at Vienna, consisting of seventeen sheets in elephant folio, and containing the Lord's Prayer in six hundred and eight languages, printed with Roman letters, and in two hundred languages, in the characters peculiar to each language—a specimen of printing, as it was truly observed, "of vast design and exquisite execution."*

Marvellous, however, as was this display of typographic skill, it was paralleled, if not excelled, by the spectacle presented in the case of

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* See that very useful publication, "The Year Book of Facts in Science and Art."

the British and Foreign Bible Society, which exhibited the word of God printed in one hundred and twenty different languages. How many years of study had been devoted by men of different lands, that these books might be given to the world! To accomplish this, rude and strange languages had been formed, and unwritten dialects had been moulded into order. We have said, in an early portion of this work, that Caxton had not dared to print a copy of the word of God. What a difference presents itself to the mind, as it reviews the interval between the day when Caxton drew his first printed proof, and our own age, when the printing-press has attained such gigantic magnitude and power! and how solicitous ought we to be, that the mighty engine which has thus been placed in our hands should be wielded for good, and made to tend to the glory and not to the dishonor of God.

CHAPTER VIII.

ST. PAUL'S CHURCHYARD was once the most celebrated mart for books. The London booksellers of olden times had their shops at all the principal entrances to the old cathedral, while some of them, as well as those of other trades, were to be found within the precincts of that edifice. A scarce tract on the burning of St. Paul's Cathedral bears the following imprimatur: "Imprynted at London, at the west ende of Paule's Church, at the sygne of the Hedghogge, by William Seres." Towards the close of the reign of Henry VIII., and during that of Edward VI., some valuable works were published on this spot by the printer Daye; but his press was silenced during the popish tyranny of Mary. Under the more auspicious reign of Elizabeth, however, he resumed his labors, and at great risk embarked large sums of money in printing the works of Becon, Tyndale, and other reformers. Foxe, whose "Acts and Monuments" were frequently reprinted at Daye's press, appears to have

been supported by the employment which Daye gave him as editor. A spirit of opposition was excited by the trade against this enterprising printer and publisher, and every endeavor was used to check the sale of his works; upon which Archbishop Grindall allowed him to have a shop under the front of St. Paul's for their sale, by which means they were circulated. "Arise, for it is day," was the device adopted by him as his motto, which might have a twofold reference — first, to his being called "The printer of the Reformation," and, secondly, to his own cognomen.

The great change which has taken place within the last fifty or sixty years in the whole matter of book-making, forces upon us a contrast, which, in passing from St. Paul's Churchyard, we are anxious to present to the view of the reader. In 1850, the American ambassador, speaking of his early associations with the British metropolis, said, "he could never forget that the first book he ever read was published in St. Paul's Churchyard." Doubtless the book-reminiscences of many others have a reference to the same spot, and especially to the shop of Mr. Newberry, filled as it was with gilded toy-books, two inches square, dazzling the eyes of his little patrons —

with other works of a larger but equally unprofitable kind, as "Jack the Giant Killer," "St. George and the Dragon," etc.

Mr. Newberry, whom we have just named, may be said to have been the first publisher of children's literature, but his works were of a different character from those which are now provided for the young. Among other of the superior books for children in Mr. Newberry's day, one was entitled, "The Royal Guide; or, An easy introduction to reading English, embellished with a great variety of copper-plate and other cuts. Most humbly inscribed to his Royal Highness, Prince Edward. London, printed for E. Newberry, at the corner of St. Paul's Churchyard. Price sixpence." The frontispiece is a likeness of the infant prince. The picture alphabet with which it commences is quite above the cuts of wood which were made for plebeian children. The following is a specimen of the rhymes under the letter A:—

"The axe which traytors often dread,
And husbandmen employ,
Will sure, in time, cut off the head
Of every naughty boy."

By far the greater number of the children's books which were in vogue at the beginning of

this century, especially those known as sixpenny toy-books, were not to be compared, even in their power to entertain children, (to say nothing of the absence of other qualities,) with a large proportion of the penny books with which the world is now filled. If any intelligent person, of any age, will read the superior juvenile works published in the present day, in connection with any book bearing Mr. Newberry's imprint, we are confident there will be no desire to restore the nursery literature of the olden time. Doubtless, grave errors have crept into modern juvenile works, and an equally indefensible extreme has frequently been reached, in the endeavor to avoid puerility; but all must readily admit that truth reveals more wonders than fable or fiction, though the objects it presents may not be so incongruous or grotesque. We cannot suppose that the Creator has formed the mind even of a little child to be more pleased with a human head on the body of a fish, (which may be taken as a sample of the illustrations in the works referred to,) than with each in its proper relation. It is an imposition on the understanding of such a child to represent to him a bird using a cross-bow, or a bear reading from a book. It admits of no question that there is a more excellent method of providing

for the wants of the youthful mind—a method which combines greater advantages with fewer defects, equal entertainment with more utility. The numerous excellent works for the young published in our own day, prove that the truth has been recognized, that children can be interested without having their minds filled with literary rubbish.

At the period to which we have already alluded, books and paper were sold only at stalls; hence the dealers in these articles were designated *stationers*. This class of tradesmen, after the fire of London, removed from St. Paul's Churchyard to Little Britain and Paternoster Row. Little Britain, anciently Breton street, from the mansion of the Duke of Bretagné being there, now became a street of great literary importance, being filled with the shops of stationers. Within four years, 464 pamphlets are said to have been published there. The publication of "The Spectator" in folio was commenced in this street by Buckley, a learned printer and publisher, at his shop, bearing the sign of the Dolphin. At the close of the seventh volume, this popular work was suspended, but was subsequently resumed by Buckley, on his removal to Amen Corner. Buckley's taking up his position at Amen Corner may be regarded as

indicating a return on the part of booksellers to that neighborhood as the great mart of books, which it has continued to be to the present day.

The houses in Paternoster Row, "from the first north gate of St. Paul's churchyard unto the next gate, were first built without the wall of the churchyard by Henry Walters, mayor, in the year 1282." This street, as Stow informs us, was called Paternoster Row, because of stationers or text-writers that dwelt there, who wrote and sold all sorts of books then in use. There dwelt there also turners, and they were called paternoster-makers, according to "a record of one Robert Nikkel, paternoster-maker and citizen, in the reign of Henry IV."

Before the fire of London, the same writer informs us, "this street was taken up by eminent mercers, silkmen, and lacemen, and their shops were so resorted unto by the nobility and gentry in their coaches, that ofttimes the street was so stopped up, that there was no passage for foot-passengers. But after the fire, those tradesmen removed to other parts. In 1720, the inhabitants in this street were a mixture of tradespeople, and chiefly tire-women, for the sale of commodes, top-knots, and the like dressings for the females. There were also many shops of mercers and silk-

men, and at the upper end some stationers, and large warehouses for booksellers, well situated for learned and studious men's access thither, being more retired and private."

A change has since then taken place, and Paternoster Row is now emphatically the booksellers' mart. The intelligent stranger, as he traverses this far-famed locality, may be said to stand upon the spot from which issue the streams of knowledge that go forth to fertilize the earth. Here literature in all its diversified forms meets the eye. There is no spot, perhaps, where the mind may so appropriately meditate on the power of the printing-press as this, whence so many of its productions are annually sent forth to the world.

That this vast engine, the press, is sometimes largely perverted to the doing of evil, is an indisputable and deplorable fact. It was said, only a few years ago, by a high literary authority,* "The press is pouring out, every day, a tide of books, which distract the attention, weaken the judgment, corrupt the taste, and defy the criticism of the public by their very multitude. Every one, young or old, man or woman, fool or wise,

* Edinburgh Review.

thinks himself able to say something which may catch the people's eye, to raise himself either by money or notoriety. The whole world has become a great school, where all the people have turned themselves into teachers; and the ravenous appetite of an idle people, always craving for some new excitement or amusement, and ready to swallow the most unwholesome food, is daily stimulating the market. What should we say if a man had the power of so volatilizing a grain of arsenic, that its effluvium should be spread over a whole country, entering into every house, and penetrating to the most vital part of the body? And yet, until it is shown that the human mind is good in itself, and the source of good — that is not what we know it to be, save only when purified by religion, corrupt itself, and a corrupter of others — this power, which every man possesses, and which so many exercise, of diffusing their thoughts over the world, and insinuating them into the heart of a nation, is, in reality, the power of spreading a pestilential miasma."

The only antidote to this moral poison, the only counteractive of the evils thus exhibited, is truth. Most desirable and important is it that the popular literature of our country should have

for its basis the great and eternal principles of revealed religion; that in the presentation before the mind of the phenomena of the natural world, there should be a distinct recognition of the Creator, not as he is pictured by the unaided imagination, but invested with those attributes which the Sacred Scriptures unveil as his peculiar, unchangeable, and everlasting possession; and which, whenever the interesting and valuable incidents of individual history, or the events that occur on the far larger and grander scale of a nation or a continent, are narrated, the providence of the infinite Ruler should be acknowledged, as surveying with an omniscient eye the vast and the minute, the occurrence of a moment, or the circumstances of an age, or a series of ages, and making all occurrences work out the purposes of his wisdom and benevolence. It will be a happy day in the history of the world when our popular literature shall partake of this character.

Among the many large publishing establishments in Paternoster Row, is the extensive one of The Religious Tract Society, which was formed to promote the circulation of religious books and treatises in foreign countries, as well as throughout the British dominions. At the com-

mencement of its operations, in 1799, the sphere of its labors was much circumscribed by the smallness of its funds, and the unsettled and warlike state of most of the nations of the earth; but through the general intercourse with foreign countries, from the long continuance of peace, and the increased support which the public has given to the Society, its exertions have been extended to almost every part of the world. The first year's circulation amounted only to 200,000 tracts, in one language, and its total receipts were about £450; but, assisted by the disinterested labors of many esteemed friends, and the devoted missionaries of different Christian denominations, the Society has now printed important tracts and books in ONE HUNDRED AND TWELVE languages and dialects; its annual circulation of works from the Depository in London, and from various foreign societies, amounted to about TWENTY-SEVEN MILLIONS: its receipts to £68,126 11*s.* 4*d.*; and its total distribution to March, 1852, including the issues of its foreign Societies, to about FIVE HUNDRED AND SEVENTY-SIX MILLIONS of copies of its publications. It is an important fact, that the *daily* circulation of the Society's works, except on the Sabbath, exceeds 86,000 copies. As a part of this circula-

tion, the issues of particular books are often very large. Upwards of 427,000 copies have been sold of "The Anxious Inquirer after Salvation Directed and Encouraged."

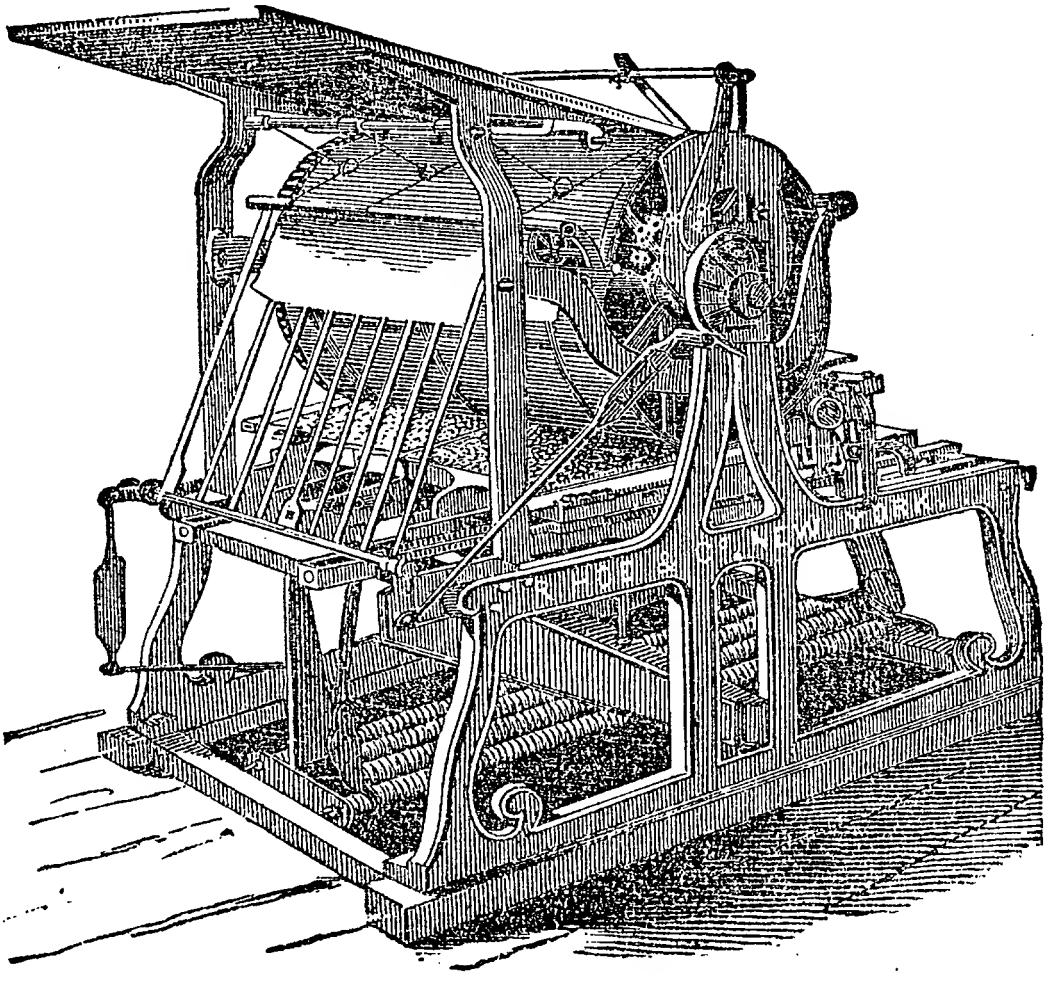
The Religious Tract Society has not confined itself solely to the issue of tracts, but has sought, by means of its works on history, education, and popular subjects, like the present volume, to keep pace with the increased demand for general information, taking care that all its productions shall be seasoned with that religious knowledge which is the highest of all blessings. Its great rule is, that each of its publications shall contain a clear statement of the method of a sinner's recovery from guilt and misery by the atonement and grace of the Redeemer; so that if a person were to read a tract even of the smallest size, and should never have an opportunity of seeing another, he might be plainly taught, that, in order to salvation, he must be born again of the Holy Spirit, and justified by faith in the atonement of Christ. These truths are brought under the notice of the reader, and affectionately commended to his attention, as being able, when received into the heart by a living faith, to make him wise unto salvation.

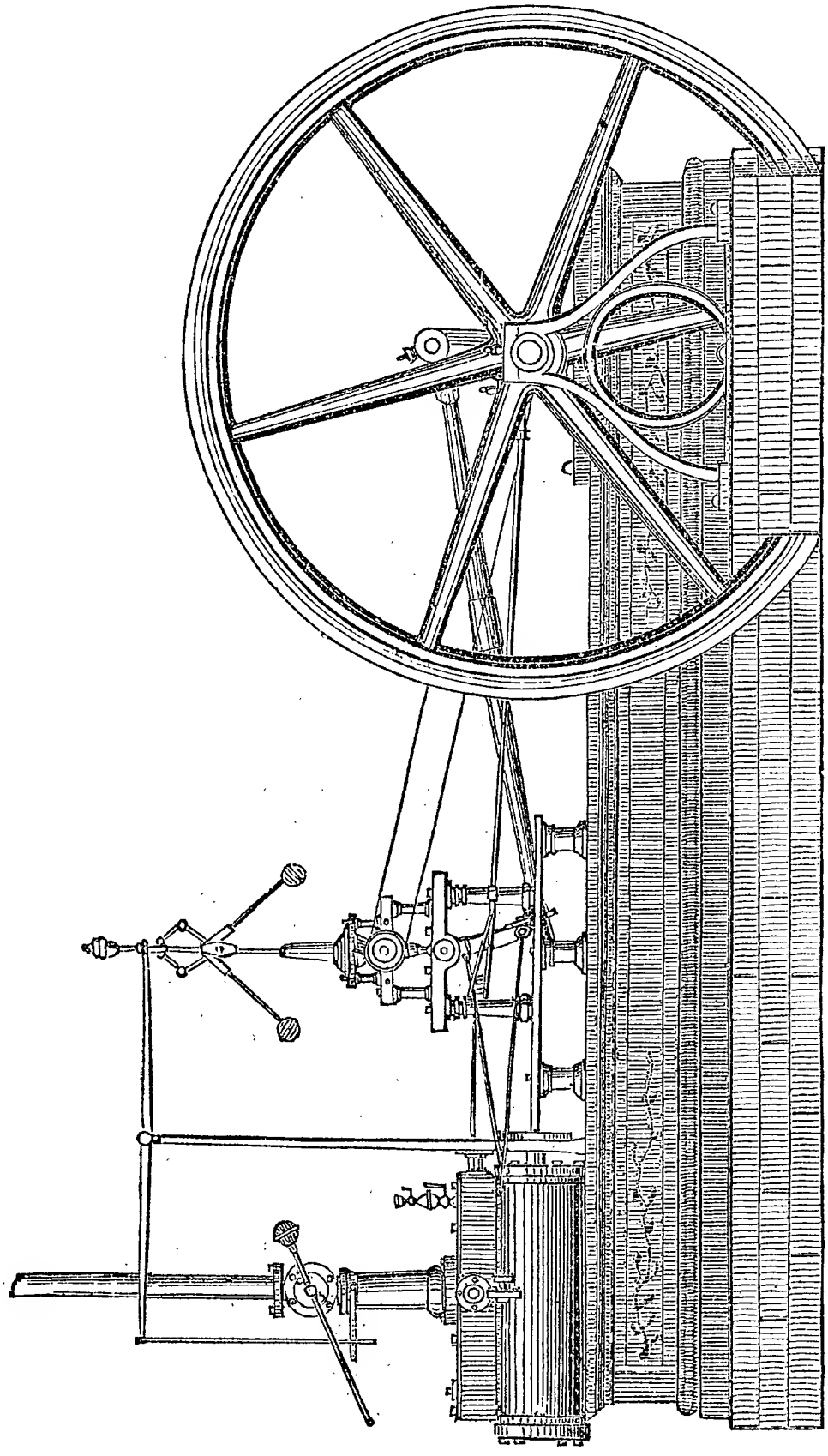
The American Tract Society is rivalling the

transatlantic institution in its publications; and the Publishing Houses of the Methodist Episcopal Church, North and South, are multiplying their valuable evangelical works, and scattering them over the United States. Other Churches are availing themselves of the facilities afforded by the press, in the great work of evangelizing the world. We devoutly pray that they all may be successful in their efforts to promote this great enterprise. The printing establishment from which this book is issued is now (1855) in its infancy—we hope, by the Divine blessing, it will soon attain a vigorous maturity — from which it may never decline until the knowledge of the Lord shall cover the earth as the waters cover the sea.

APPENDIX.

THE improvements made in printing presses since the discovery of the art have been very great. The Adams "bed and platten" press, on which this book is printed, is a noble invention—some idea of it may be gathered from the Frontispiece. Newspapers are for the most part printed on a cylinder press, of which the following is a representation.

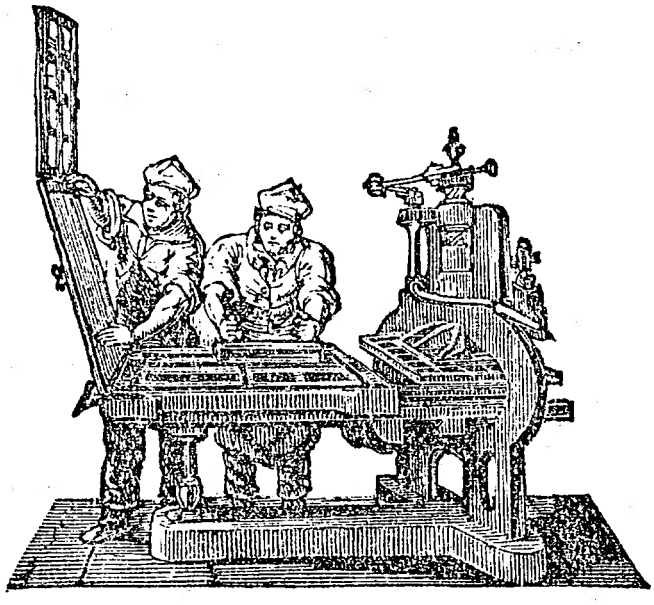




STEAM ENGINE USED IN THE PUBLISHING HOUSE.

These presses are worked by steam-power. An engraving of the engine that drives the presses in our Publishing House may be seen on the preceding page.

These presses are widely removed from the hand press, which is, however, still in use for small jobs. The old-fashioned hand press is represented in the following engraving.



It may not be altogether useless to spread before our readers a list of the signs used by proofreaders in correcting the press—which, by the way, is a business which requires no small literary attainment as well as great care and attention. On the succeeding pages we give a specimen of "proof-sheet," with the proofreader's corrections and the explanation of the marks employed by him.

Peter Schoeffer is said to be the person who *Caps.*
invented *cast metal types*, having learned
the art ~~of~~ of *cutting* the letters from the Gut- *o*
tembergs, he is also supposed to have been
the first who engraved on copper plates. The
following testimony is preseved in the family, *r*
by Jo. Fred. Faustus of Aschaffenburg: *#*
Peter Schoeffer of Gernsheim, perceiving his *s.caps.*
master Fausts design, and being himself
tr. (desirous ardently) to improve the art, found
out (by the good providence of God) the
method of cutting (~~*incidendi*~~) the characters *stet.*
in a *matrix*, that the letters might easily be
singly *cast*, instead of bieng *cut*. He pri- *ei*
vately *cut matrices* for the whole alphabet:
Faust was so pleased with the contrivance
that he promised Peter to give him his only *w. f.*
daughter Christina in marriage, a promise *ital.*
which he soon after performed.) *no ¶.*

as (But there were many difficulties at first
rom. with these *letters*, as there had been before
ital. with wooden ones, the metal being by mixing *out s.c.*
tr. the a substance with metal which hardened it,
(*and when he showed his master the letters*
cast from these matrices,

EXPLANATIONS.

ℓ *dele*—take out the superfluous word "of."

ꝑ turn the reversed letter "p."

insert a space between "who" and "engraved."

⌣ less space between the words.

¶ make a new paragraph.

tr. transpose the words "desirous" and "ardently."

stet. let *incidendi* (accidentally erased) remain.

w. f. "wrong fount" type to be changed.

out s. c. "out, see copy." The words omitted being too numerous to be written on the margin.

The other marks are self-explanatory.